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1 IN THE UNITED STATES DISTRICT COURT
2 SOUTHERN DISTRICT OF NEW YORK

3 -----x
4 SECURITIES AND EXCHANGE COMMISSION,

5 Plaintiff, Case No.
6 20-civ-10832 (AT) (SN)

7 vs.

8 RIPPLE LABS, INC., BRADLEY GARLINGHOUSE,
9 and CHRISTIAN LARSEN,

10 Defendants.
11 -----x

12 ** CONFIDENTIAL SUBJECT TO PROTECTIVE ORDER **
13
14

15 VIDEOTAPED DEPOSITION OF

16 DAVID SCHWARTZ

17
18 919 Third Avenue

19 New York, New York

20
21 May 26, 2021

22 9:17 a.m.
23

24 Reported b:
25 Cheryll Kerr, CSR
JOB No. 210526CK

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9 and CHRISTIAN LARSEN,

10 Defendants.
11 -----x

12 ** CONFIDENTIAL PURSUANT TO PROTECTIVE ORDER **
13

14 VIDEOTAPED DEPOSITION OF DAVID SCHWARTZ, held
15 at the offices of Debevoise & Plimpton, LLP, located
16 at 919 Third Avenue, New York, New York, before
17 Cheryll Kerr, CSR, a Certified Shorthand Reporter
18 and notary public, on Wednesday, May 26th, 2021,
19 at 9:17 a.m.
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21
22
23
24
25

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Alex King, Kellogg, Hansen et al., LLP (via Zoom)

*** **

INDEX

| WITNESS | PAGE |
|------------------------------------|------|
| DAVID SCHWARTZ | |
| Direct examination by Mr. Tenreiro | 16 |
| Cross-examination by Mr. Ceresney | 409 |



EXHIBITS

(Premarked on page 17)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 2 | Multi-page printout from Bitcoin Forum entitled "Latest Posts of JoelKatz" dated April 15, 2013 | 231 |
| Exhibit 3 | Multi-page printout from Bitcoin Forum entitled "Latest Posts of JoelKatz" dated April 17, 2013 | 226 |
| Exhibit 5 | Multi-page printout from Bitcoin Forum entitled "Latest Posts of JoelKatz" dated May 13, 2013 | 246 |
| Exhibit 6 | Multi-page printout from Bitcoin Forum entitled "Latest Posts of JoelKatz" dated May 20, 2013 | 107 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 7 | One-page e-mail dated 6/10/2013 to from David Schwartz to  | 250 |
| Exhibit 9 | Two-page document entitled "XRP Ledger Amendment" | 120 |
| Exhibit 11 | Two-page GitHub printout | 174 |
| Exhibit 13 | Multi-page document entitled "Validator Registry" | 196 |
| Exhibit 14 | Multi-page document entitled "The Ripple Protocol Consensus Algorithm" | 179 |
| Exhibit 15 | Multi-page document entitled "Analysis of the XRP Ledger Consensus Protocol" dated February 21, 2018 | 181 |
| Exhibit 18 | Three-page e-mail dated 4/16/19 from David Schwartz  | 184 |
| Exhibit 19 | Document entitled "If Ripple Failed, XRP died - General Discussion - Xrp Chat" | 91 |


(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|--|------|
| Exhibit 20 | Document entitled "Exchanges with XRP autobridging? (Aka 'I'm not going to spill the beans just yet') - General Discussion - Xrp Chat) | 270 |
| Exhibit 21 | Four-page Twitter printout dated 5/5/2017 | 256 |
| Exhibit 22 | Multi-page document entitled "Valuation Models - XRP The Digital Currency vs. Ripple the Company - XRP Trading and Price Speculation - Xrp Chat" dated 5/25/2017 | 283 |
| Exhibit 23 | Multi-page document entitled "For people asking about 'Coin vs Protocol'" dated "29 juin" | 292 |
| Exhibit 25 | Two-page Twitter printout entitled "David 'JoelKatz' Schwartz on Twitter: '@bitcoinlobo @SASchofield52 @Ripple I know it sounds ridiculous tod...' dated 1/8/19 | 51 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 27 | Five-page Insights article entitled "How We Are Further Decentralizing the XRP Ledger to Bolster Robustness for Enterprise Use" dated 5/11/17 | 198 |
| Exhibit 30 | 31-page document entitled "What Did Ripple Do Wrong? - Page 4 - General Discussion - Xrp Chat" | 66 |
| Exhibit 31 | E-mail dated 4/18/17 from  | 382 |
| Exhibit 32 | Nine-page printout from Bitcoin Forum entitled "[XRP] Ripple Speculation" | 260 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 34 | 26-page printout entitled "Ripple sold \$91.6 million of its digital currency XRP last quarter, as the price surged almost 30,000% - Press - Xrp Chat" | 310 |
| Exhibit 35 | 10-page printout from Bitcoin Forum entitled "Latest posts of JoelKatz" dated 5/30/17 | 318 |
| Exhibit 36 | 35-page printout entitled Ripple: The Most Prestigious Team - General Discussion - Xrp Chat" | 80 |
| Exhibit 37 | 33-page printout entitled "Insiders Dumpling? - Page 6 - XRP Trading and Price Speculation - Xrp Chat" | 394 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 38 | 26-page printout entitled "How do you like your misinformation? Please, feel free to correct him - Off-Topic - Xrp Chat" | 272 |
| Exhibit 39 | 24-page document entitled "Can the first usage of xRapid actually flood the market with XRP? - Page 3 - General Discussion - Xrp Chat" | 326 |
| Exhibit 40 | 34-page document entitled "Ripple: 'The fundamental Value of XRP' - Page 5 - Press - Xrp Chat" | 351 |
| Exhibit 42 | Eight-page e-mail dated 12/31/17 from [REDACTED]@ripple.com to [REDACTED]@ripple.com et al. | 219 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 44 | E-mail chain with the top e-mail dated 11/13/18 from Monica Long to [REDACTED] [REDACTED] et al. | 222 |
| Exhibit 46 | 23-page document entitled "Can Ripple labs reverse a payment? - Page 2 - Technical Discussion - Xrp Chat" | 190 |
| Exhibit 47 | E-mail dated 2017-12-21 from [REDACTED] to David Schwartz et al. | 384 |
| Exhibit 48 | E-mail dated 2018-01-09 from [REDACTED] to David Schwartz et al. | 387 |
| Exhibit 52 | 10-page document entitled "I am David Schwartz, Chief Cryptographer at Ripple. AMA!" | 337 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID Exhibit | DESCRIPTION | PAGE |
|-------------------------|---|------|
| Exhibit 57 | 38-page document entitled "Why the world needs Ripple XRP - Whitepaper" dated January 15, 2020 | 342 |
| Exhibit 58 | Three-page document entitled "Considering that the banks don't use XRP coins for their transactions, how can the XRP price go high even if the banks adopt the Ripple platform?" dated 11/12/17 | 355 |
| Exhibit 59 | Ripple document entitled "Where a community about your favorite things is waiting for you" submitted 22 Jun 2017 | 357 |
| Exhibit 60 | Two-page document entitled "Issuing Gateway vs. Private Exchange - Gateways and Exchanges - Xrp Chat" | 86 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 61 | Four-page document entitled "Forbes - The Bear Case for XRP - Page 3 - Press - Xrp Chat" | 360 |
| Exhibit 63 | E-mail chain with top e-mail dated 7/13/18 from Brad Garlinghouse to Asheesh Birla et al., "Subject: Coinbase decision" | 369 |
| Exhibit 64 | E-mail chain with top e-mail dated 7/14/18 from Brad Garlinghouse to Chris Larsen et al. | 372 |
| Exhibit 66 | E-mail dated 7/23/18 from Miguel Vias to Brad Garlinghouse et al. | 379 |
| Exhibit 68 | E-mail chain with top e-mail dated 7/18/19 from Brad Garlinghouse to David Schwartz | 390 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 69 | E-mail chain with top e-mail dated 3/31/2020 from David Schwartz to Brad Garlinghouse | 393 |
| Exhibit 70 | E-mail chain with the top e-mail dated 7/6/2020 from Brad Garlinghouse to David Schwartz et al. | 213 |
| Exhibit 71 | Eight-page document entitled "David "JoelKatz" Schwartz (u/sjoelkatz) - Reddit" dated 7/3/18 | 399 |
| Exhibit 75 | Nine-page document entitled "Opencoin Features Overview" bearing Bates Nos. DS_RPLI0002158 through DS_RPLI0002166 | 397 |
| Exhibit 76 | Four-page Twitter printout entitled "David 'JoelKatz' Schwartz on Twitter" dated December 1, 2020 | 201 |

(Continued on the next page)

EXHIBITS (Cont.)

| DS FOR ID | DESCRIPTION | PAGE |
|--------------|---|------|
| Exhibit 77 | Document entitled "Technical FAQ - XRPL.org" | 161 |
| Exhibit 80 | Two-page e-mail chain with top e-mail dated 6/20/18 from [REDACTED] to [REDACTED]@ripple.com | 375 |
| Exhibit 83 | 31-page document entitled "Master Press Q&A" | 404 |
| Exhibit 84 | 10-page entitled "Make XRP Great" | 404 |

*** **

1 THE VIDEOGRAPHER: Okay. This is the
2 videotaped deposition of David Schwartz,
3 deponent, in the matter of SEC vs. Christian
4 A. Larsen, defendants. Case number is
5 20-civ-10832 and this deposition is being held
6 at Debevoise & Plimpton, at 919 Third Avenue,
7 New York, New York.

8 Today's date is Wednesday, May 26th, 2021
9 and the time is approximately 9:17 a.m. My
10 name is David Shereck, certified videographer
11 with Gradillas Court Reporters, located at 400
12 North Brand Boulevard in Glendale, California.

13 All appearances will be noted on the
14 stenographic record, and the court reporter
15 today is Cheryll Kerr, also with Gradillas,
16 and will you please swear in the deponent?

17 D A V I D S C H W A R T Z,
18 called as a witness, having been duly
19 sworn, was examined and testified
20 as follows:

21
22 DIRECT EXAMINATION

23 BY MR. TENREIRO:

24
25 (Continued on the next page)

(Thereupon, the following exhibits were premarked for identification: DS Exhibit 2, 3, 5, 6, 7, 9, 11, 13, 14, 15, 18, 19, 20, 21, 22, 25, 27, 30, 31, 32, 34, 35, 36, 37, 38, 39, 40, 42, 44, 46, 47, 48, 52, 57, 58, 59, 60, 61, 63, 64, 66, 68, 69, 70, 71, 75, 76, 77, 80, 83, and 84.)

BY MR. TENREIRO:

Q. Please state your name for the record.

A. David Schwartz.

Q. Mr. Schwartz, are you represented by counsel?

A. I am.

Q. Who is your counsel?

A. Debevoise.

Q. Okay. My name is Jorge Tenreiro. I'll be asking questions today on behalf of SEC.

With me are my colleagues Daphna Waxman, Jon Daniels, and other SEC staff members on the phone.

Mr. Schwartz, other than SEC testimony in this case, have you ever given testimony under oath before?

A. I have been deposed before.

Q. In connection with what matter?

A. Well, previously with this matter, and once with an IRS matter involving a former employer of mine.

MR. CERESNEY: Mr. Tenreiro, just before

1 we proceed any further, just two stipulations
2 on the record.

3 One is that any objection by defense
4 counsel will be imputed to the other
5 departments, so defendants Garlinghouse and
6 Larsen --

7 (Thereupon, an informal discussion was
8 held off the record with the shorthand
9 reporter.)

10 MR. CERESNEY: Any objection by one party
11 will be an objection by all parties. That's
12 one stipulation.

13 The other stipulation is that this
14 transcript will be marked confidential under
15 the protective order in this case. That's it.

16 (Thereupon, an informal discussion was
17 held off the record.)

18 THE VIDEOGRAPHER: Off the record at 9:18
19 a.m.

20 (Recess taken at 9:18 a.m.)

21 (Resumed at 9:24 a.m.)

22 THE VIDEOGRAPHER: Back on the record at
23 9:24.

24 BY MR. TENREIRO:
25

1 Q. Thank you. So, Mr. Schwartz, it sounds like
2 you've -- you know, you've given testimony or deposition
3 under oath. Just briefly, to remind you, it's important
4 that we don't talk over each other. If you wait for me
5 to complete my question before answering in order to
6 create a clear record, I'll try to do the same. Please
7 give verbal answers rather than shaking your head or
8 nodding, and don't tell me the substance of any advice
9 that your lawyers have given you throughout the course
10 of today's deposition.

11 I'll start by asking you if there's any reason why
12 you cannot testify truthfully or accurately today.

13 A. There is not.

14 Q. Okay. Mr. Schwartz, are you employed?

15 A. Yes.

16 Q. And where?

17 A. I am employed by Ripple.

18 Q. Since when?

19 A. Well, I started work on what eventually
20 became the company Ripple in November of 2011, and I was
21 employed by the company since it was formed.

22 Q. And what is your title today?

23 A. My entitled today is chief technology
24 officer.

25 Q. When did you get that title?

1 A. I believe it was sometime in 2018. I'm not
2 exactly sure.

3 Q. Who do you report to today?

4 A. I report to Brad Garlinghouse.

5 Q. Before 2018, did you report to -- did your
6 reporting structure change when your title changed?

7 A. It did. Prior to that, I reported to Chris
8 Larsen.

9 Q. Did you report to Mr. Larsen even when he was
10 no longer CEO of the company?

11 A. Yes.

12 Q. Okay. Why did you report to him?

13 A. A small number of employees, including
14 myself, remained in sort of the previous reporting
15 structure still reporting to Chris Larsen.

16 Q. Who else remained reporting to Mr. Larsen?

17 A. I know his executive assistant did, and I
18 believe [REDACTED] did.

19 (Thereupon, an informal discussion was
20 held off the record with the shorthand
21 reporter.)

22 THE WITNESS: [REDACTED] his
23 executive assistant, and [REDACTED]

24 [REDACTED] Sorry. I sometimes forget.

25 THE SHORTHAND REPORTER: It's okay.

1 BY MR. TENREIRO:

2 Q. No problem. Why did your reporting structure
3 change sometime in 2018?

4 (Pause.)

5 THE WITNESS: Chris Larsen had been
6 reducing his day-to-day responsibilities with
7 the company over a period of time, and this
8 was just sort of a step in that process.

9 BY MR. TENREIRO:

10 Q. Okay. Does anyone report to you currently?

11 A. No.

12 Q. How is it you came to work for the company or
13 the project that became Ripple in November of 2011?

14 A. [REDACTED] had the original idea for what
15 eventually became the company, and he found me online.

16 Q. Where online?

17 A. I believe he was familiar with -- with who I
18 was and what I was doing at the time through my posts on
19 a Bitcoin forum, and then he posted a job offer on, um,
20 I think it was stack exchange careers, which was like an
21 experimental -- an experimental website at the time.

22 But -- and I think he had someone point me to it,
23 posted that job offer so I would specifically see it.

24 Q. And what did you work or what can do you
25 before you started working on this project in November

1 of 2011?

2 A. Prior to that, I worked for a software
3 company in San Jose called [REDACTED]

4 Q. What were you doing for them?

5 A. I was in charge of software development.

6 Q. Okay. Can you briefly describe your
7 educational background post-high school?

8 A. I studied electrical engineering at the
9 University of Houston.

10 Q. Anything else?

11 A. No.

12 Q. Okay, and what is your role at Ripple today?
13 What are your responsibilities?

14 A. Today, I -- I have -- I am responsible for
15 the security of the company's XRP holdings, and
16 generally the direction of development, strategic
17 direction, those kinds of things.

18 Q. What do you mean by "the security of the
19 company's XRP holdings"?

20 MR. TENREIRO: Actually, strike that.

21 BY MR. TENREIRO:

22 Q. Just for the record, what is XRP?

23 A. A digital asset that trades on the
24 decentralized public ledger.

25 Q. And what do you refer -- what do you refer to

1 that ledger as?

2 A. The XRP Ledger.

3 Q. Okay. Just so that we can use the same
4 language, what do you mean by you are "responsible for
5 the security of the company's XRP holdings"?

6 A. Digital assets like XRP can be stolen or
7 compromised in various ways, and one of my
8 responsibilities is to make sure that that does not
9 happen to the company's XRP holdings.

10 Q. How much -- what are the company's XRP
11 holdings today?

12 A. I would have to check to give you the exact
13 number, but roughly 50 billion XRP.

14 Q. Okay. Has that number changed over time?

15 A. It has decreased over time.

16 Q. Okay. We'll get back to that. So who -- who
17 wrote the code for what became the public version of the
18 XRP Ledger?

19 A. Several hundred people.

20 Q. What was your role in that?

21 A. I was probably one of the two major
22 developers in the early days, then gradually reducing
23 over time.

24 Q. In the very early days, 2011/2012 time
25 period?

1 A. Yes.

2 Q. Okay. At that point, who was writing code?
3 Was it several hundred people back then?

4 A. No.

5 Q. Okay, so who was writing back then?

6 A. The two primary developers were myself and
7 Arthur Britto.

8 Q. Did you copyright the code?

9 A. It's automatically copyrighted as soon as we
10 create it.

11 (Thereupon, an informal discussion was
12 held off the record with the shorthand
13 reporter.)

14 THE WITNESS: It's automatically
15 protected by copyright as soon as we write it.

16 BY MR. TENREIRO:

17 Q. What do you mean, "automatically protected by
18 copyright?

19 A. My understanding of the way copyright in the
20 United States is that nothing specific needs to be done
21 for a work to be copyrighted.

22 Q. Okay, and where did you derive that
23 understanding, without discussing the advice of counsel,
24 if you can answer that?

25 A. Just various intellectual property issues

1 that I've been involved with throughout my entire
2 career.

3 Q. Okay. When was the XRP Ledger deployed to
4 the public?

5 A. I would have to -- I would have to check the
6 exact dates, but I think it was either late 2012 or
7 early 2013.

8 Q. Okay, and did XRP -- was XRP in the genesis
9 block for the ledger?

10 A. Yes.

11 Q. Okay, and when was XRP created?

12 A. It's not really possible to answer that
13 question.

14 Q. Why is that?

15 A. Because the term XRP is not sufficiently
16 precisely defined to allow you to draw a bright line.

17 Q. What would you need to define it in order to
18 draw a bright line?

19 A. Some precise definition that was -- that will
20 enable you to say that on a particular date, what
21 existed was or was not XRP.

22 Q. Let me ask you this:

23 Is it fair to say that at some point, Mr. Britto
24 wrote code that would define how the initial
25 distribution of XRP would occur?

1 A. Yes, yes.

2 Q. Okay, and what would --

3 What did that code provide in terms of the
4 distribution?

5 A. That code placed 100 billion units, each
6 divisible into one million subunits, into the genesis
7 block.

8 Q. Okay, and is it fair to say the ledger that
9 you were working on as reset a number of times before it
10 was deployed publicly?

11 A. Yes.

12 Q. And each time it was reset, what --

13 Would that be a sort of -- new genesis block each
14 time it was reset?

15 A. Yes.

16 Q. Okay, and so there was a sort of new
17 iteration of XRP each time there was a reset?

18 A. I -- I hesitate to adopt that terminology,
19 again, because the term "XRP" --

20 It's a term that has a precise meaning today, but
21 it -- it can't necessarily draw that meaning back in
22 time.

23 Q. Okay. Fair enough.

24 (Pause.)

25 BY MR. TENREIRO:

1 Q. Who decided to deploy the XRP Ledger
2 publicly?

3 MR. GERTZMAN: Objection to the form.

4 (Thereupon, an informal discussion was
5 held off the record.)

6 BY MR. TENREIRO:

7 Q. Go ahead.

8 A. That was something that we had always planned
9 to do from the very, very beginning.

10 Q. At what point did Mr. Larsen get involved
11 with that project?

12 A. [REDACTED] brought Chris Larsen in to be
13 CEO. I couldn't place the time period exactly for you,
14 but prior to the formation of the company.

15 Q. Was the company formed prior to the public
16 launch of the ledger?

17 A. I'm not sure.

18 Q. Okay. Did Mr. Larsen have any role in
19 deciding to publicly launch the ledger?

20 A. He was CEO at the time and he was present at
21 conversations about the timing, but I -- I couldn't tell
22 you how much inputs he provided.

23 Q. Briefly, so that we're -- you know, I'm
24 trying to get on the same page, which is the XRP Ledger.
25 You already said something, but could you expand a

1 little bit?

2 A. Sure. The XRP Ledger is a public,
3 decentralized -- it is technically a blockchain that
4 stores and processes transactions to move XRP and other
5 digital assets.

6 Q. You say, "technically a blockchain." Why did
7 you say, "technically a blockchain"?

8 A. The term "blockchain" has evolved over time,
9 but as I understand the meaning of the term
10 "blockchain," it meets the criteria to be considered a
11 blockchain.

12 Q. What do you understand the meaning of the
13 term "blockchain" to be?

14 A. I understand the meaning of the term
15 "blockchain" to be literally a chain of blocks, and by
16 "blocks," I mean chunks of information that contain
17 transactions.

18 And by "chain," I mean each block, except the first
19 one has a cryptographically secure reference to the
20 prior block.

21 Q. And does the XRP Ledger --

22 Is the XRP Ledger a chain of blocks or is it a
23 chain of ledgers?

24 A. You could --

25 You could use either terminology. The way I use

1 the terms, a ledger is a block with some additional
2 information in it.

3 Q. And does every block in the XRP Ledger or
4 every ledger, as whatever term we're using, have a
5 cryptographically secure reference to the prior block?

6 A. Yes. Except the first, obviously.

7 Q. Except the first? Now, is it also fair to
8 say that -- let's talk about blockchains generally.

9 A distributed blockchain is -- is run over several
10 computers, a network of computers?

11 A. Yes.

12 MR. CERESNEY: Objection to form.

13 BY MR. TENREIRO:

14 Q. Is that also true for the XRP blockchain?

15 A. Yes.

16 Q. Sorry. XRP Ledger. Apologies.

17 Now, when the XRP Ledger was publicly launched, how
18 many nodes was the computer running -- was -- was the
19 network running on?

20 A. I know at that time, there were three
21 validators, but I couldn't tell you how many -- other
22 nodes. Let me rephrase a little more precisely.

23 There were three validators that were on what we
24 would call UNL. There may have been other validators
25 running or other servers. I couldn't tell you for sure.

1 Q. Let's take it one step at a time. What is a
2 validator in the context of the XRP Ledger?

3 A. In the context of the XRP Ledger, a validator
4 is a node that coordinates with other nodes in the
5 consensus process.

6 Q. And the consensus process achieves what
7 purpose?

8 A. The purpose of the consensus process is to
9 break ties in the ledger.

10 Q. Is one of the purposes to --

11 Well, is one of the purposes of the validators to
12 permit the ledger to continue moving forward?

13 MR. CERESNEY: Objecting to form. You
14 can answer.

15 THE WITNESS: One of the purposes of the
16 validators is to ensure a consistent view of
17 the ledger as it moves forward.

18 Otherwise, there could be equally good
19 ways the ledger could make forward progress.

20 (Thereupon, an informal discussion was
21 held off the record with the shorthand
22 reporter.)

23 BY MR. TENREIRO:

24 Q. So do the validators help the ledger make
25 forward progress?

1 A. They ensure there's a -- that it's possible
2 to have a single view on how the ledger makes forward
3 progress. It would make forward progress without them.

4 Q. How would it make forward progress without
5 them?

6 A. The way the software is designed, it's -- we
7 describe it as opportunistic. That is, it makes forward
8 progress unless it is impossible to make forward
9 progress, which it basically never is. The -- yeah, I
10 think I'll stop there.

11 Q. Well, without the validators ordering
12 transactions, would there be double spin?

13 A. What could happen is there could be
14 disagreement over -- over which ledger people wanted to
15 honor.

16 Q. So fork, in other words?

17 A. Yes, an unintentional fork.

18 Q. Has there ever been a fork on the company
19 ledger since inception?

20 A. There are forks of the type that you were
21 just talking about all the time. I guess you would call
22 them minor or small forks.

23 But if the network is operating normally, they
24 don't cause any -- they don't cause any problem. They
25 last -- you know, a couple of seconds.

1 Q. So just to make sure I understand the insert,
2 have there ever been any forks on the XRP Ledger since
3 inception, other than minor forks that have not lasted
4 more than a few seconds?

5 MR. CERESNEY: Objection to form.

6 THE WITNESS: Right. Other than those
7 minor things that are technically forks that
8 don't cause -- they're completely harmless and
9 you wouldn't even notice unless there were
10 specific -- there has not been a harmful
11 fork -- to my knowledge, at least -- since the
12 inception.

13 (Thereupon, an informal discussion was
14 held off the record with the shorthand
15 reporter.)

16 BY MR. TENREIRO:

17 Q. When was the last time the XRP Ledger was
18 reset?

19 A. I believe it was early -- late 2012, but I'm
20 not exactly sure.

21 Q. Was it around the time it was publicly
22 deployed?

23 A. I think it was within a couple months. I'm
24 not sure.

25 Q. And the 32,000 or so blocks that were lost

1 originally -- when was that, approximately?

2 MR. CERESNEY: Objection.

3 BY MR. TENREIRO:

4 Q. Were there -- has the XRP Ledger --

5 Are some of the original blocks or ledgers -- were
6 they lost?

7 A. Yes.

8 Q. Okay, and when was that, just in time?

9 Before or after the public launch?

10 A. I think it was after, but I'm not certain.

11 Q. Okay. Does it affect the functioning of the
12 ledger today in any way?

13 A. No.

14 Q. Why not?

15 A. The XRP Ledger is designed -- it doesn't
16 require you to have history in order to operate.

17 Q. Every new ledger -- every closed ledger has
18 all of the information, in other words?

19 A. Correct.

20 MR. GERTZMAN: Objection to form.

21 BY MR. TENREIRO:

22 Q. Okay. So is it fair to say that your
23 recollection is that when the ledger was launched, there
24 were three validators that were engaged in the consensus
25 process?

1 A. Yes.

2 Q. And who operated or ran those validators back
3 then?

4 A. My recollection is that until the incident
5 with the lost ledgers, [REDACTED] ran them exclusively.

6 Q. From his home?

7 A. Well, he operated them for wherever they
8 were. The validators themselves -- I believe they were
9 running on an Amazon infrastructure.

10 Q. And the loss of some of the -- the loss of
11 some of the blocks caused a change in that, I guess? Is
12 that what you're saying?

13 A. Yes.

14 Q. And what happened after that?

15 A. After the incident with the lost blocks -- at
16 first, we didn't know --

17 We didn't know what had happened, so [REDACTED] asked me
18 to investigate, and in order to do that, I needed access
19 to those validators.

20 Prior to that, I didn't have any role. I'm not
21 even positive I knew that there were three. I might
22 have. I might not have. At that point, it became
23 important that I look at the infrastructure.

24 Q. What had happened, just briefly?

25 A. All -- all three of the validators that Jed

1 was running at the time were built -- were built
2 substantially the same way. They were on the same
3 infrastructure and they all ran out of disk space at
4 roughly the same time of the.

5 The software, at that point, didn't have any
6 safeties to handle that in the same way, so there was a
7 data -- relationships between data was lost.

8 Q. Does the software have safeties to handle
9 that today?

10 A. Yes.

11 Q. Who programmed that into the software?

12 A. I believe either myself or [REDACTED] did
13 so immediately after that incident.

14 Q. What language is the software program in?

15 A. C++.

16 Q. What was the function of XRP at the time that
17 the ledger was launched publicly?

18 A. At that time the time, the primary function
19 of XRP was to sort of fund transactions pay for
20 transactions and prevent spam.

21 Q. So -- and how much did the transactions cost
22 at that time, approximately?

23 A. I don't remember exactly.

24 But it would have been much less than one XRP,
25 probably on the order of magnitude like a thousandth of

1 an XRP, possibly less. I don't exactly recall.

2 MR. GERTZMAN: Objection.

3 (Thereupon, an informal discussion was
4 held off the record with the shorthand
5 reporter.)

6 BY MR. TENREIRO:

7 Q. Did -- you said, "fund transactions."

8 Was someone receiving the XRP when they engaged in
9 a transaction, or what was happening to the XRP?

10 A. Transaction fees are destroyed.

11 Q. So the XRP that was, let's say, charged by
12 the ledger for a transaction just disappears?

13 A. Correct.

14 MR. CERESNEY: Objection to form. You've
15 got to wait.

16 THE WITNESS: Yes.

17 BY MR. TENREIRO:

18 Q. Is that still the case today?

19 A. Yes.

20 Q. And the cost of a transaction has changed
21 over time for this function only?

22 A. I think -- I think there was at least one
23 change, but I don't recall for sure.

24 Q. Who would have programmed that change?

25 A. There was a change to the fee structure that

1 I originally designed, and it was implemented by the
2 team -- the team at the time.

3 Q. The programmers?

4 A. Yes.

5 Q. When I asked you what the function of XRP was
6 at the time that the ledger was launched publicly, you
7 said at that time, the primary function was to sort --
8 sort the fund transactions.

9 A. Uh-huh.

10 Q. Was there any other function at that time?

11 A. Very close to that time, there was another
12 function.

13 Q. What was that?

14 A. That was as -- as a sort of intermediary
15 currency between other assets on the ledger.

16 Q. Is this in connection with the exchange that
17 Ripple constructed on the XRP Ledger?

18 A. It is in connection with the decentralized
19 exchange.

20 Q. Who created that exchange?

21 A. That was a very early design idea in very
22 early 2012, and that was primarily developed by [REDACTED]

23 [REDACTED]

24 Q. Does that function exist today?

25 A. Yes.

1 Q. Is it used today?

2 A. Yes.

3 Q. You know, how --

4 What's the order of magnitude of XRP used on that
5 today?

6 A. I could not tell you offhand the magnitude of
7 XRP that's used. I can tell you the value exchange is
8 on the order of \$10 million a day, some XRP, some not.
9 I suspect XRP is the dominant fraction of that.

10 Q. So it's other assets being exchanged for each
11 other?

12 A. Yes.

13 Q. What assets, for example?

14 A. There are assets denominated in U.S. dollars,
15 other cryptocurrencies are there, and then there are
16 assets that represent either commodities or intangible
17 items.

18 Q. Has Ripple ever sold XRP for use in this way
19 on this decentralized exchange on the ledger?

20 (Pause.)

21 THE WITNESS: Ripple has sold XRP at
22 times when XRP was being used on the
23 decentralized exchange.

24 BY MR. TENREIRO:

25 Q. But has Ripple ever sold it specifically for

1 that use, as far as you know?

2 A. It's hard to make sense of that question.

3 Generally, we didn't know what people were going to use
4 XRP for.

5 Q. Okay. At some point, did another use for XRP
6 develop?

7 So we talked about the use as you've described the
8 first user, the primary use as sort of avoiding spam
9 transactions.

10 A. Uh-huh.

11 Q. Is that a fair characterization of that use?

12 A. Yes.

13 Q. And then we talked about the exchange. At
14 some point, did other uses develop?

15 A. Yes.

16 Q. Okay, and let's start with when.

17 A. Roughly 2014, XRP started being used
18 essentially as a means of payment.

19 Q. And who developed that use?

20 A. I don't know.

21 Q. Was it someone at Ripple?

22 A. No.

23 Q. Did Ripple promote XRP as a means of payment?

24 MR. CERESNEY: Objection to form.

25 THE WITNESS: If you interpret "promote"

1 broadly enough, I believe, for example, we
2 circulated documents that mention that as a
3 use case.

4 BY MR. TENREIRO:

5 Q. Okay. All right. Just to be clear, no one
6 at Ripple developed that use case; is that fair?

7 A. I don't believe so.

8 Q. Okay, and at any point in time, did any other
9 uses develop?

10 A. I -- I think the -- I think there certainly
11 were others.

12 Q. Well, actually, let me take a step back.
13 Earlier, when I asked you whether Ripple had ever sold
14 XRP specifically for use on the decentralized exchange,
15 you said it's hard to make sense of that question.
16 Generally, we didn't know what people were going to use
17 XRP for.

18 Is that also true with respect to XRP's use as a
19 means of payment? Did Ripple ever sell it specifically
20 for that use, as far as you know?

21 MR. GERTZMAN: Objection to form.

22 THE WITNESS: Construing that broadly,
23 you could include some of our -- some of the
24 ODL uses.

25 BY MR. TENREIRO:

1 Q. Construing what broadly?

2 A. Means of payment? Yes.

3 Q. You could construe some of the ODL -- well,
4 did Ripple sell XRP in connection with ODL?

5 MR. GERTZMAN: Objection to the form.

6 (Pause.)

7 THE WITNESS: Yeah, it -- it's hard to
8 give a "yes" or "no" answer to that question.

9 BY MR. TENREIRO:

10 Q. Why is that?

11 A. Both -- well, first of all, because I don't
12 know exactly what -- what -- what the nature of the
13 transactions that the ODL team negotiated were, and I
14 hesitate to characterize them as "sales" without knowing
15 more details about the nature of those transactions.

16 Q. Okay. Other than construing broadly means of
17 payment to include ODL, as far as you know, did Ripple
18 sell XRP as a means of payments?

19 MR. CERESNEY: Objection to form.

20 THE WITNESS: I don't know.

21 BY MR. TENREIRO:

22 Q. Okay. At some point, were there discussions
23 at Ripple about trying to develop XRP for use for banks
24 to use as a bridge currency?

25 A. Yes.

1 Q. And did that use --

2 Did you have any involvement with -- any attempts
3 to develop that use?

4 A. Yes.

5 Q. When did that use case as a bridge currency
6 come into existence, if at all?

7 A. I think --

8 I think, as I said previously, the use as a sort of
9 intermediary asset on the ledger was a very early idea,
10 early 2013.

11 Q. Right. No, I understand the idea, but my
12 question was a little bit different, which is: When did
13 that idea actually come to fruition such that banks
14 might have used XRP as a bridge currency?

15 MR. CERESNEY: Objection to form.

16 THE WITNESS: To my knowledge, for banks
17 to be able to do that --

18 They wouldn't have been able to do it
19 without -- with the Ripple -- with something
20 made by Ripple until xRapid went live.

21 (Thereupon, an informal discussion was
22 held off the record with the shorthand
23 reporter.)

24 THE WITNESS: With a product that Ripple
25 provided until xRapid was launched.

1 MR. TENREIRO: xRapid.

2 THE SHORTHAND REPORTER: Thank you.

3 BY MR. TENREIRO:

4 Q. Which was when?

5 A. I don't recall exactly.

6 Q. Okay. We can get to that.

7 As far as you know, are banks using the xRapid
8 product today?

9 A. Today, the primary customers are not bank
10 financial institutions, payment -- payment providers.

11 Q. So did the --

12 This idea that banks might use XRP as a bridge
13 currency -- has that actually come to fruition, meaning
14 do banks actually use XRP as a bridge currency today, as
15 far as you know?

16 A. Not as far as I know.

17 Q. Okay. Is it fair to say that the people who
18 created the XRP Ledger are some of the people who
19 founded Ripple?

20 A. Yes.

21 Q. Is it fair to say that the people who created
22 XRP are some of the people who founded Ripple or created
23 Ripple?

24 A. Yes.

25 Q. Okay. And Mr. Schwartz, you have an online

1 pseudonym; is that right?

2 A. Yes.

3 Q. That's Joel Katz?

4 A. Yes.

5 Q. With a K?

6 A. Yes.

7 Q. We can get into -- we will get into the
8 specific forum, but is it your understanding that --

9 Well, when you post online as Joel Katz, do you
10 typically identify yourself as a Ripple employee?

11 A. Yes.

12 Q. Okay.

13 A. Yes.

14 Q. Do you have any understanding whether the
15 people who read posts by Joel Katz understand that these
16 are posts by Mr. Schwartz?

17 MR. CERESNEY: Objection form.

18 THE WITNESS: My understanding is that
19 I'm pretty clear when I'm speaking for the
20 company and when I'm speaking for myself.

21 BY MR. TENREIRO:

22 Q. Right. Thank you, but my question is: Do
23 you --

24 Do you know whether people understand that Joel
25 Katz is David Schwartz? Separate from the company for a

1 second.

2 MR. CERESNEY: You're asking him to
3 speculate as to whether --

4 MR. TENREIRO: Really, to speculate.

5 BY MR. TENREIRO:

6 Q. I mean, you're online a lot; is that fair to
7 say?

8 A. Yes.

9 Q. You interact with people online; is that
10 fair.

11 A. Yes.

12 Q. Okay. So from your interactions, do you
13 think that these people know that Joel Katz is David
14 Schwartz?

15 A. I have said so several times, but I don't
16 know what -- whether -- I don't know that ... I -- I
17 would have to speculate. I would have to speculate.

18 Q. Okay. In terms of what you said a minute
19 ago, I think you said something along the lines of --
20 you made clear --

21 You said, "I'm pretty clear when I'm speaking for
22 the company and when I'm speaking for myself." What did
23 you mean by that?

24 A. I mean that I generally try to make clear
25 whether I'm speaking in my individual capacity or when

1 I'm making a statement for the company.

2 Q. How do you do that? How do you make that
3 distinction?

4 A. It varies. Sometimes by explicitly stating
5 it's not a position of the company, so sometimes by
6 explicitly stating that it is.

7 Q. If you don't explicitly state either, which
8 is it?

9 A. I think it's -- I think it's -- it would
10 generally be clear from context, but usually it's an
11 individual view.

12 Q. So sort of like on Twitter where people
13 say -- you know, "Views are my own, not my company's"?

14 A. Yes.

15 Q. That's the idea?

16 A. Yes.

17 MR. CERESNEY: Objection to form.

18 BY MR. TENREIRO:

19 Q. Okay. What would the -- well, let's look at
20 the context.

21 You said it would be clear from the context. What
22 context would I look for to know whether it's a company
23 view or an individual view?

24 A. The type of statement that it was.

25 Q. What do you mean, the type of statement?

1 A. If a statement is a clearly personal view,
2 then someone would understand it to be a personal view,
3 whereas if it's the type of statement that a future CTO
4 would -- would hold, then it would be a more official
5 view.

6 Q. A future CTO?

7 A. Right.

8 Q. What do you mean by that?

9 A. If it's -- if I'm speaking in my capacity as
10 CTO of Ripple, it would be a position that would be --
11 that any CTO could make. Even like a future CTO would
12 be bound to that position, because it was a -- had been
13 a statement from the office, if it's that type of
14 statement.

15 Q. Before CTO, what was your title?

16 A. Chief cryptographer.

17 Q. Chief cryptographer was your title for the
18 entire period before CTO?

19 A. I believe there was a brief period -- there
20 were --

21 There was a brief period, prior to the formation of
22 the company, where I either had no title or there might
23 have been an expectation that I might have the CTO title
24 at some point, but it was very quickly established it
25 would be CTO.

1 Q. Fair enough.

2 (Thereupon, an informal discussion was
3 held off the record.)

4 BY MR. TENREIRO:

5 Q. I just want to ask one question before we get
6 to the exhibits.

7 Are all the statements that you make online before
8 XRP on behalf of the company or on behalf of yourself?

9 A. Most of them are on behalf of myself.

10 Q. And all the statements that you make online
11 about Ripple -- are they on behalf of the company or
12 yourself?

13 A. Most of them are on my own behalf.

14 Q. Okay. Does the company -- has the company
15 ever tried to sort of restrict the statements that you
16 make on your own behalf with respect to XRP or Ripple?

17 A. Only with respect to pending litigation.

18 Q. Okay. Have you ever received direction from
19 the company about what you might post online?

20 MR. CERESNEY: Other than counsel?

21 BY MR. TENREIRO:

22 Q. Well, I don't want to get into the
23 conversations, but has counsel directed you to post
24 online?

25 MR. CERESNEY: I'm not going to allow him

1 to answer what counsel has directed him to do.

2 If the question is "Have there been
3 discussions with counsel about his posts,"
4 that's a fair question.

5 If the question is what he's been
6 directed to do, I'll instruct him not to
7 answer.

8 BY MR. TENREIRO:

9 Q. All right. Let's ask the first question.
10 Have there been discussions with counsel about your
11 posts online?

12 A. Yes.

13 Q. Which counsel?

14 A. Current counsel in -- current counsel in
15 the -- in this litigation.

16 Q. Any other counsel before?

17 A. Not that I recall.

18 Q. Did you discuss any of your public posts with
19 counsel at Perkins Coie -- or did you discuss the --

20 Just "yes" or "no." Did you discuss your public
21 posts with Perkins Coie counsel?

22 A. Yes.

23 Q. Okay. Let's look at --

24 A. No, I'm sorry.

25 I want to correct that answer. I believe Perkins

1 Coie -- no, I did not.

2 Q. Okay. What about Paul Hastings?

3 A. I don't believe so.

4 Q. And so your --

5 Your current recollection is that the only counsel

6 you've discussed the subject of your posts with is

7 Debevoise?

8 A. Yes, that's correct.

9 Q. What about others at the company?

10 Have you discussed with nonlawyers at the company

11 your posts?

12 A. Yes.

13 Q. Have they directed you with respect to your
14 posts online?

15 A. Yes.

16 Q. And generally, what have they told you?

17 MR. CERESNEY: I just -- just to be
18 clear, these are not lawyers?

19 THE WITNESS: Right.

20 MR. CERESNEY: Okay.

21 THE WITNESS: Only both not to discuss
22 pending litigation, and occasionally, they
23 recommended a particular tweet.

24 BY MR. TENREIRO:

25

1 Q. Have you followed those recommendations?

2 A. Generally, yes.

3 Q. Are those on behalf of the company or on
4 behalf of yourself?

5 A. It's not really possible to answer in
6 general.

7 Q. We would have to look at the specific ones?

8 A. Yes.

9 MR. TENREIRO: Okay. Now, Exhibit 25.

10 I'm going to pass around -- the exhibits have
11 been premarked. We e-mailed some to you.

12 There's a couple that have changed. I will
13 let you know on the record when that occurs.

14 I will also note for the record we
15 accidentally marked these with yesterday's date,
16 so -- you know, we're not intending to travel
17 back in time. It's today's date. This is
18 Exhibit 25, DS-25.

19 (Thereupon, a two-page Twitter printout
20 entitled "David 'JoelKatz' Schwartz on Twitter:
21 '@bitcoinlobo @SASchofield52 Ripple I know it
22 sounds ridiculous tod...' dated 1/8/19" was
23 introduced as DS Exhibit 25 for identification.)

24 MR. CERESNEY: Just for the record, do
25 you have a copy?

1 MR. TENREIRO: Yes.

2 MR. CERESNEY: Just for the record, I
3 understand that the exhibits will be e-mailed
4 to the folks on the zoom so they have it.

5 MR. TENREIRO: And we have the list of
6 e-mails?

7 MR. CERESNEY: Yes. Daphna has the list
8 of e-mails.

9 (Thereupon, an informal discussion was
10 held off the record.)

11 MR. CERESNEY: So if you want to ask
12 foundation questions --

13 MR. TENREIRO: Sure. Sam is here, right?
14 We just need to e-mail it to Larsen's counsel.

15 (Thereupon, an informal discussion was
16 held off the record.)

17 MR. TENREIRO: Okay. Great.

18 MR. CERESNEY: Nowell's on the Zoom as
19 well, so he deserves a copy as well.

20 MR. BAMBERGER: Thank you.

21 BY MR. TENREIRO:

22 Q. Mr. Schwartz, is this your Twitter account?

23 A. Yes.

24 Q. So -- sorry. @JoelKatz is your Twitter
25 account?

1 A. Yes.

2 Q. Okay. I'm referring you to a tweet towards
3 the middle of the page, where you say -- actually, it's
4 on the second page. Do you see a tweet where you say:

5 "It is misleading to say Ripple had nothing to do
6 with the creation of XRP. The people who created XRP
7 are pretty much the same as the people who created
8 Ripple, and they created Ripple originally to, among
9 other things, distribute XRP"?

10 Do you see that tweet?

11 A. Yes.

12 Q. Did you make that tweet?

13 A. Yes.

14 Q. Did the company direct you to make this
15 tweet?

16 A. No.

17 Q. Is this tweet on behalf of the company or
18 yourself?

19 (Pause.)

20 THE WITNESS: I -- I don't really know.

21 (Thereupon, an informal discussion was
22 held off the record.)

23 BY MR. TENREIRO:

24 Q. And if I'm reading the tweet, how could I
25 tell -- you know, this is David speaking or Mr. Schwartz

1 speaking or is this someone on behalf of the company?

2 What context here would I look to determine -- you
3 know, which of the two it was?

4 MR. CERESNEY: I'm just instructing the
5 witness to look at the whole chain just so he
6 can put it in context.

7 MR. GERTZMAN: I'm going to object to the
8 form.

9 THE WITNESS: I don't know what someone
10 else would look to, but I would look to the
11 conversational flow of the chain to see this
12 is an individual engaged in a conversation.

13 BY MR. TENREIRO:

14 Q. So looking at the conversational flow of the
15 chain, is this a tweet on behalf of Mr. Schwartz
16 individually or on behalf of the company?

17 A. I don't really have an answer. I don't know.

18 Q. Okay. Did anyone at the company ever ask you
19 to remove a post you've made online?

20 A. Not that I can think of. I don't believe so.

21 Q. Have any of your posts been removed by you?

22 A. There -- there are a couple cases.

23 Q. What are those cases?

24 A. One of them -- one -- one example would be
25 posts that like had a typo or some error, I just

1 removed. Twitter has that function, so I removed it to
2 correct fairly immediately.

3 Q. Any other examples that come to mind?

4 A. I don't believe I've ever removed a
5 substantive post significantly after making it.

6 Q. Was there something called --

7 A. Oh, let me just say one thing.

8 There was one tweet that I made that someone said
9 was causing them to get abusive comments, and so I
10 deleted that post at their request.

11 Q. Okay. Was there something called XRP Forum?

12 A. Yes.

13 Q. Does that still exist?

14 A. I think it may have changed its name. It at
15 one time was Xrp Chat, and I believe it still exists in
16 one or the other form.

17 Q. Who managed it?

18 A. I cannot remember the name.

19 Q. Was there something called XRP Wiki at some
20 point?

21 A. I don't recall that, but there might have
22 been.

23 Q. Okay. Going back to the exhibit, Exhibit 25,
24 which you have in front of you, and the tweet that I
25 read, what did you mean when you say here that "The

1 people who created XRP created Ripple originally to,
2 among other things, distribute XRP"?

3 What does "distribute XRP" mean here?

4 A. Give XRP to people so they could access the
5 ledger.

6 Q. Okay, and is -- why are you --

7 What do you mean by "It's misleading to say Ripple
8 had nothing to do with the creation of XRP"?

9 A. Precisely for the reason I state in the
10 second sentence, that the people who created XRP are the
11 same people that created Ripple, and one of their
12 objectives in creating Ripple was to give people XRP so
13 they could interact with the ledger.

14 Q. Did there come a time when it sort of became
15 a talking point of the company to state publicly that
16 XRP was created after the company -- sorry -- before the
17 company was founded?

18 MR. CERESNEY: Objection to form.

19 MR. GERTZMAN: Form.

20 THE WITNESS: To my knowledge, we stated
21 it and then it became -- it sort of morphed
22 into a talk point because other people stated
23 that it was not true.

24 BY MR. TENREIRO:

25

1 Q. Okay, and what -- what is -- what is your
2 understanding of the reason why people said it was not
3 true?

4 MR. CERESNEY: Objection to form.

5 BY MR. TENREIRO:

6 Q. If any?

7 MR. CERESNEY: If you know.

8 THE WITNESS: I don't really know.

9 BY MR. TENREIRO:

10 Q. Okay, and does -- why -- does Ripple -- does
11 Ripple --

12 Is Ripple's current sort of position to the public
13 that XRP was created before Ripple was created?

14 MR. CERESNEY: Objection to form.

15 MR. GERTZMAN: Objection to form.

16 THE WITNESS: We've always stated that.

17 MR. TENREIRO: Okay.

18 (Pause.)

19 BY MR. TENREIRO:

20 Q. Okay. We'll talk about the consensus
21 mechanism a little more, but I want to ask you in the
22 last --

23 In the last step of the consensus process for the
24 XRP Ledger, when the last known ledger closes -- is that
25 the last step of the consensus mechanism?

1 A. You can define the consensus -- so --

2 It's unfortunate that there's some confusion in
3 terminology.

4 Some people use the term "consensus" to mean
5 everything necessary to advance the ledger and have
6 ledgers that people rely on, and some people draw a
7 distinction between what's consensus and what's a
8 validation.

9 Q. How do you think about it?

10 A. Because I'm involved in the technical
11 process, I generally draw that distinction, but it's
12 generally less helpful to do that -- you know, in
13 conversation with people who are not technically
14 interested in it.

15 Q. I actually am technically interested in the
16 details, so the validation process -- please -- so we're
17 on the same page, where do you draw the distinction? So
18 let's start again.

19 There are some steps in this process where let's
20 say a node that's validating transactions puts out its
21 sort of idea of what the ledger should look like; is
22 that correct?

23 MR. CERESNEY: Objection to form.

24 THE WITNESS: That's what I describe as
25 the validation part of the process.

1 BY MR. TENREIRO:

2 Q. Okay.

3 A. As distinct from consensus.

4 Q. And consensus is what part of the process?

5 A. Consensus is the part of the process that
6 advances the ledger without necessarily establishing
7 finality.

8 Q. Well, why would it not establish finality?

9 A. That's validation's job. You do have
10 to finality in order to be -- in order for --

11 (Thereupon, an informal discussion was
12 held off the record with the shorthand
13 reporter.)

14 THE WITNESS: Sorry. In order for
15 advancing the ledger to be useful, at some
16 point, you have to establish finality. But
17 I -- I --

18 For technical precision, I prefer to
19 describe those as two separate processes:
20 Consensus, advance the ledger; validation,
21 establish finality.

22 BY MR. TENREIRO:

23 Q. Which occurs first?

24 A. Consensus.

25 Q. Okay, and validation -- is this the last step

1 in this entire process? Is that correct?

2 MR. CERESNEY: Objection to form.

3 THE WITNESS: Yes.

4 BY MR. TENREIRO:

5 Q. Okay. When --

6 So when validation occurs, is that the moment when
7 the last known ledger is closed?

8 A. No.

9 Q. That's the consensus part?

10 A. Yes.

11 Q. Okay. When validation occurs, the ledger
12 advances? The state of the ledger advances?

13 A. It depends on how you define "state of the
14 ledger".

15 Q. Well, how do you define it for purposes of
16 the moment when validation occurs?

17 A. So the state -- consensus is always advancing
18 the state of the ledger, but if you define state of the
19 ledger as the confirmed state, then validation advances
20 that state of the ledger.

21 Q. Okay, so let -- let's define it as the
22 confirmed state.

23 So validation advances the confirmed state of the
24 ledger?

25 A. Yes.

1 Q. That's something you want to occur?

2 A. That's the ultimate goal of this process.

3 These are all steps to achieve that end result.

4 Q. When validation advances the confirmed state
5 of the ledger, where does that occur physically?

6 A. In each individual node participating in or
7 moderating or participating in the process. That's an
8 individual decision that each server makes.

9 Q. So it occurs --

10 Just today, as an example, is it fair to say that
11 there are nodes engaging in this consensus validation
12 process all over the world?

13 A. Yes.

14 Q. Including the United States?

15 A. Yes.

16 Q. So is it your testimony that when the
17 validation advances --

18 When the validation process advances the confirmed
19 state of the ledger, this physically occurs in several
20 countries all over the world?

21 MR. CERESNEY: Objection. Are you asking
22 for a legal conclusion?

23 MR. TENREIRO: No. I'm asking him where
24 physically --

25 MR. CERESNEY: You're just asking where

1 the servers are that are the validators?

2 MR. TENREIRO: No. I'm not asking him
3 that.

4 BY MR. TENREIRO:

5 Q. When the validation advances -- when the
6 validation process advances the confirmed state of the
7 ledger, where is that physically occurring? If the
8 answer depends on where the servers are, you can explain
9 that.

10 A. Each server independently tracks the state --
11 what it considers the last validated ledger, and it
12 advances its own state.

13 Q. And so if a server is in the United States,
14 that is occurring in that server in the United States?

15 A. That server will advance its own state where
16 that server is for its own purposes.

17 Q. But you need -- you know, 80 percent of the
18 servers to advance sort of their agreed-upon state
19 ledger, right?

20 MR. CERESNEY: Objection to the form.

21 THE WITNESS: 80 percent of the servers
22 that particular server has chosen to listen
23 to.

24 BY MR. TENREIRO:

25

1 Q. Right. Okay, so from the perspective of the
2 server that has chosen a particular set is it fair to
3 say that this validation process that confirms the
4 closed state of the ledger currencies on all of the
5 servers, it's distributed across all of the servers?

6 A. Yes.

7 Q. Okay. All right. What percent --

8 Do you know what percentage of the validate --
9 ledger validating nodes today are run in the United
10 States?

11 A. I don't.

12 Q. How would I find that out?

13 A. I guess you could crawl the network. You
14 would have to do a three-step process.

15 You'd have to crawl the network to identify all the
16 nodes, then check each node to see which are validating,
17 and then you could -- you could infer the geographic
18 location from the IP address.

19 Q. All right.

20 A. It would not be a perfect process, but it
21 would be reasonably accurate.

22 Q. Do you know if any of the nodes use VPN to
23 mask their IP address?

24 (Thereupon, an informal discussion was
25 held off the record with the shorthand

1 reporter.)

2 THE WITNESS: I don't.

3 BY MR. TENREIRO:

4 Q. Okay.

5 A. I don't know why someone would other than to
6 maybe secure -- I think if they did, they would be more
7 likely to protect against being attacked than to mask
8 them.

9 Q. Right, and Ripple has nodes that are ledger
10 validating nodes today; is that fair?

11 A. Yes.

12 Q. And where are the servers for that located?

13 A. We've moved them several times. I'm not sure
14 precisely where they are today.

15 Q. Do you know what country they are in?

16 A. I don't.

17 Q. Who would know?

18 A. I'm sure someone in our office. I suspect
19 they are suspect they are geographically distributed for
20 fault tolerance, but I don't know for sure.

21 Q. Do you know if some of them are in the United
22 States?

23 A. I don't. I would have to guess.

24 Q. Okay. We'll get back to the ledger. Has --
25 did Ripple ever promote XRP as a virtual currency?

1 MR. CERESNEY: Objection to form.

2 THE WITNESS: I think Ripple described
3 XRP as a virtual currency.

4 BY MR. TENREIRO:

5 Q. To whom?

6 A. Every -- everyone. I think just in general.

7 Q. At what time?

8 A. I don't recall when we started using the term
9 "virtual." Do you mean like specifically the term
10 "virtual currency" or the concept?

11 Q. The term.

12 A. I don't know -- remember when we started
13 using it.

14 Q. So I understand that your testimony is that
15 Ripple described XRP as a virtual currency, but did
16 Ripple ever promote XRP as a virtual currency?

17 MR. CERESNEY: Objection to form.

18 THE WITNESS: I don't know the difference
19 between promoting ... yeah, I can't really
20 understand where the boundaries of "promote"
21 would be.

22 BY MR. TENREIRO:

23 Q. Okay. Let's take a look at Exhibit 30.

24 (Informal discussion was held off the
25 record.)

1 (Thereupon, a 31-page document entitled
2 "What Did Ripple Do Wrong? - Page 4 - General
3 Discussion - Xrp Chat" was introduced as DS
4 Exhibit 30 for identification.)

5 BY MR. TENREIRO:

6 Q. I'm handing you what was premarked DS-30.
7 It's a Reddit post, I believe. Sorry, Xrp Chat post.
8 There's a lot of pages. I'm just going ask you about a
9 post on page 22.

10 You can look at whatever you need. I apologize for
11 the way these print. I haven't figured out a better way
12 to do it. Perhaps afterward, you will tell me how.

13 A. I have the same problem.

14 Q. Yeah, so I'll just --

15 There's no Bates number, because this is just from
16 online -- you know, Xrp Chat.

17 A. There are small page numbers.

18 Q. Yeah, there's page numbers. I'm looking at
19 22, but there's no Bates number.

20 A. Oh, I got you.

21 Q. The post at issue, I believe, was posted on
22 April 2nd, 2017.

23 (Thereupon, an informal discussion was
24 held off the record.)

25 THE WITNESS: So what page did you want

1 to call my attention to?

2 MR. TENREIRO: 22. 22, please.

3 MR. CERESNEY: You will see that you're
4 responding to the -- lots of posts, so take
5 your time.

6 BY MR. TENREIRO:

7 Q. Yeah.

8 A. Difficult to tell who said what in some
9 places.

10 Q. Maybe -- maybe this will help. If you look
11 at the post, I believe -- but you can tell me if it's
12 wrong, That you're quoting certain posts and then
13 posting a response, as indicated by some of the
14 quotation marks.

15 There's something in quotation marks. Then there's
16 something else without quotation marks and so on a
17 number of times.

18 A. Yes.

19 Q. Is that -- first of all, what is Xrp Chat?

20 A. It's a -- a forum that was created in the
21 very early days to discuss XRP.

22 Q. Who created it?

23 A. I -- I knew, but I don't recall.

24 Q. Was it someone at Ripple?

25 A. No.

1 Q. And this -- this --

2 What appears to be this format where you have
3 something quotes and then something not in quotes -- is
4 that sort of familiar to you as a way that you might
5 have made a post?

6 A. Yes.

7 Q. Okay, and you see the title of the thread is
8 "What did Ripple do wrong?" Do you see that?

9 A. Yes.

10 Q. Do you recall this thread at all?

11 A. Not at all, no.

12 Q. Okay. So just looking at the post, there's a
13 part where it says "Failure to promote XRP's currency."
14 That's in quotation marks.

15 Do you see that part?

16 A. Yes.

17 Q. You say:

18 "We didn't think it made sense to take Bitcoin on
19 head on at its strength."

20 Do you see that?

21 A. Yes.

22 Q. What was Bitcoin's strength that you were
23 referring to here?

24 A. At that time, Bitcoin was being positioned as
25 peer-to-peer digital cash as a -- as a means of

1 peer-to-peer value exchange.

2 Q. So Ripple's strategy as a company was not to
3 pursue that? Why not? Why was that the strategy?

4 A. Two reasons. One is that anyone could do
5 that. There was no particular reason why Ripple would
6 do that. It was something anyone could do. It didn't
7 play to our strengths.

8 I think the other one was we kind of felt that
9 Ripple -- that Bitcoin kind of -- that was Bitcoin's
10 thing, so to go head to head against a market leader --
11 you know, you would constantly face "Why not just use
12 Bitcoin for that?"

13 Q. Right, and here you say --

14 Is this post on behalf of the company or on behalf
15 of yourself? To the extent you say, "we" does that give
16 context to the reader?

17 A. Yeah, I think that I -- I would agree.

18 Q. Do you agree that the word "we" gives context
19 to the reader?

20 A. Yes.

21 Q. Okay, and does that mean it's on behalf of
22 you or on behalf of the company?

23 A. I think someone would take this to be my view
24 of what the company was doing, and then -- and then with
25 me being an employee of the company, obviously, that has

1 more weight than a random person's view of why a company
2 does it.

3 Q. Sure. So is it fair to say that --

4 Is it fair to say that Ripple did not promote XRP
5 as a -- as a cash-to-cash exchange like Bitcoin was?

6 MR. CERESNEY: Objection. I don't think
7 that was the term he used.

8 BY MR. TENREIRO:

9 Q. Okay. Answer, please.

10 A. I'm sorry. Could you --

11 Q. Yes. Is it fair to say that Ripple did not
12 promote XRP as a digital currency, at least up until the
13 point of this post?

14 A. Ripple --

15 MR. GERTZMAN: Objection to form.

16 THE WITNESS: Ripple was not actively
17 pursuing that use case.

18 BY MR. TENREIRO:

19 Q. Okay. Is it pursuing that use case today?

20 (Pause.)

21 THE WITNESS: A little -- a little bit.

22 BY MR. TENREIRO:

23 Q. Please explain.

24 A. We have some strategies that could -- that
25 could facilitate those types of use cases.

1 Q. Which ones?

2 A. Well, for example, the xPring strategy.

3 (Thereupon, an informal discussion was
4 held off the record with the shorthand
5 reporter.)

6 BY MR. TENREIRO:

7 Q. In what way does the xPring strategy
8 potentially facilitate those types of use cases?

9 MR. CERESNEY: Objection.

10 THE WITNESS: At least two ways.

11 One would be some of the partners --
12 people -- companies that we were providing
13 investment or -- advice to or pursuing use
14 cases in that direction, and then some of the
15 software we were developing could be used by
16 those people who had those use cases in mind.

17 BY MR. TENREIRO:

18 Q. And do you have -- with respect to the part
19 of the strategy -- sorry. Some of the --

20 With respect to the companies that were pursuing
21 use cases in that direction, do you have knowledge as to
22 what the status of their pursuit is?

23 MR. CERESNEY: Objection. You used "that
24 direction." It's ambiguous, but --

25 MR. TENREIRO: Well, he said, "that

1 direction," and I was asking about the use
2 case as a Bitcoin-like currency.

3 So I'm assuming that's what he meant when
4 he said, "that direction," but if that's not
5 correct, let me know.

6 MR. CERESNEY: It should be clear in your
7 answer what you're talking about.

8 BY MR. TENREIRO:

9 Q. So let's take a step back.

10 I asked you in what way does the xPring strategy
11 potentially -- you know, further the use cases we were
12 discussion here, which is the -- you know, digital
13 currency use?

14 And I think you said two ways. One would be some
15 of the partners of companies we were providing advice to
16 are pursuing cases in that direction.

17 When you said that direction, did you mean the
18 discussion we're having now, the sort of medium of
19 exchange use cases?

20 MR. CERESNEY: I think you used a term
21 that hasn't come up until now, "medium
22 exchange."

23 MR. TENREIRO: Sorry. He said -- he
24 said, "medium of currency exchange" earlier.

25 (Pause.)

1 BY MR. TENREIRO:

2 Q. So let's start again. Has Ripple --

3 So does Ripple today promote XRP as a digital
4 currency, as this term is used in the exhibit?

5 MR. GERTZMAN: Objection to the form.

6 THE WITNESS: That's not a use case that
7 we are directly pursuing.

8 But we do assist other people who are
9 pursuing it, and we certainly do describe it
10 as having the use case.

11 BY MR. TENREIRO:

12 Q. The people who are pursuing it -- that
13 includes the Xpring companies, correct?

14 A. They are among -- they would be among that
15 group, yes.

16 Q. What is the status of their pursuit of that
17 use case, if you know?

18 A. I don't.

19 Q. Who knows?

20 A. Those individual companies.

21 Q. Does anyone at Ripple know?

22 A. I don't -- I don't know.

23 Q. Okay. Are you aware of a settlement between
24 Ripple and FinCEN in 2015?

25 A. Yes.

1 Q. What was the settlement about, in your own
2 terms? Not what counsel has told you. Just what's your
3 understanding?

4 A. My understanding is FinCEN alleged we didn't
5 comply with laws regarding enforcement of sanctions and
6 transmission of money.

7 Q. Did -- do you --

8 Are you aware of a settlement between Ripple and
9 the Department of Justice in 2015?

10 (Thereupon, an informal discussion was
11 held off the record with the shorthand
12 reporter.)

13 THE WITNESS: Yes, I am.

14 BY MR. TENREIRO:

15 Q. And your understanding -- layman's, no legal
16 advice -- what is that settlement?

17 A. My understanding of that settlement is that
18 Department of Justice and FinCEN agreed not to prosecute
19 Ripple for those violations in exchange for Ripple
20 agreeing to a series of stipulations.

21 Q. At that point in time, did you derive an
22 understanding -- and by "that point in time," I mean at
23 the time of the settlements, did you derive an
24 understanding as to whether XRP was a currency, based on
25 those statements -- based on those settlements?

1 A. That was a factor in my understanding of the
2 status of the XRP.

3 Q. Okay, and did you derive an understanding as
4 to whether the statements -- sorry. I keep saying, "the
5 statements."

6 Did you derive an understanding as to whether the
7 settlements sort of meant that Ripple did not have to
8 comply with other statutes with respect -- that might
9 govern XRP?

10 MR. CERESNEY: Objection, and also direct
11 you not to reveal any discussions you might
12 have had with counsel.

13 THE WITNESS: My layman's understanding
14 at the time was that that meant that the
15 position of the U.S. Attorney's office and
16 Department of Justice was that XRP would be
17 regulated and a form of -- as a form of --
18 something more currency or commodity-like.

19 BY MR. TENREIRO:

20 Q. Did you derive an understanding what the
21 SEC's position with regards to XRP would be based on
22 those settlements?

23 A. I did not.

24 Q. Do you know if others at Ripple derived an
25 understanding --

1 MR. CERESNEY: Again --

2 BY MR. TENREIRO:

3 Q. -- on what the SEC's position on what XRP
4 would be based on these settlements?

5 MR. CERESNEY: Again, I'll instruct you
6 not to -- not to discuss conversations with
7 counsel.

8 THE WITNESS: I didn't have any
9 conversations with employees about that, so I
10 couldn't -- I would have to speculate about
11 what conclusions they might have drawn.

12 BY MR. TENREIRO:

13 Q. Did the settlement --

14 Did these settlements change your understanding as
15 to whether XRP was, in fact, a digital currency as the
16 term is used in the exhibit we're looking at?

17 A. I don't think it significantly exchanged
18 my -- it was consistent with what I already expected.

19 Q. What do you mean, what you had "already
20 expected"?

21 A. My expectation -- again, I'm not in
22 compliance and this isn't my field expertise, but my
23 expectation was the government would treat XRP as akin
24 to a commodity.

25 Q. Let me -- I'm trying to understand, now,

1 you -- in Exhibit 30, you say -- you know.

2 You respond to this point that says "failed to
3 promote XRP as a digital currency" by saying, "We didn't
4 think it make sense to take on Bitcoin head-on as its
5 strength."

6 A. Uh-huh.

7 Q. Did the FinCEN settlement sort of change your
8 understanding about whether XRP was a digital currency
9 or not?

10 MR. CERESNEY: I'm going to object,
11 because you're using this document to say
12 something about the definition of the -- of
13 XRP as a currency versus the use case that
14 Ripple was promoting.

15 But you can answer the question, if you
16 can.

17 (Pause.)

18 THE WITNESS: So I'm responding here
19 to -- in -- in the statement "failed to
20 promote XRP as a digital currency."

21 What I understand that to mean is that
22 Ripple did not pursue a use case similar to
23 Bitcoin's use case, and I testified previously
24 to the reasons why we didn't do that.

25 I don't see a connection between that and

1 the FinCEN statement and my -- my
2 understanding as a result of the FinCEN
3 settlement.

4 But that didn't significantly change my
5 understanding. It was roughly consistent with
6 what I had expected at the time.

7 BY MR. TENREIRO:

8 Q. Do you have an understanding as to why if
9 Ripple did not pursue a use case similar to Bitcoin's
10 use case -- you know, you had to enter into a settlement
11 with FinCEN at all?

12 A. I don't know if this -- this particular
13 statement was before or after the settlement with
14 FinCEN.

15 Prior to the settlement with FinCEN, my view would
16 have been that there was no particular reason why Ripple
17 would pursue that use case, but we could have, and it
18 might have been successful. It just might not have been
19 the best use of resources. After that, my view was more
20 that it wasn't tenable for Ripple to pursue that use
21 case.

22 Q. Not tenable for what reason?

23 A. Because we had agreed with FinCEN on things
24 that would make -- basically make it impractical to be
25 compatible with Bitcoin if -- at that time.

1 Q. This includes the stipulations you mentioned
2 earlier?

3 A. Yes.

4 (Pause.)

5 BY MR. TENREIRO:

6 Q. I want to show you another exhibit which
7 relates to this, which is 36.

8 Actually, before we do that, do you know if others
9 at Ripple agree that it wasn't tenable or -- sorry --
10 practical -- practicable to pursue the use case we've
11 been discussing after the FincEN settlement?

12 A. My recollection is that we had discussions.
13 I don't recall specifically who, and that that was the
14 predominant view. That's my recollection.

15 We weren't planning to pursue it anyway, so it
16 wasn't -- it wasn't a couldn't controversial issue,
17 because it wasn't something that was our strategy
18 anymore.

19 Q. Did the discussions include Mr. Larsen?

20 A. I don't believe so.

21 Q. Did they include Mr. Garlinghouse?

22 A. I don't know for sure.

23 MR. TENREIRO: Do you want a break,
24 Andrew?

25 MR. CERESNEY: Yes.

1 MR. TENREIRO: Let's go off the record.

2 THE VIDEOGRAPHER: Going off the record

3 at 10:30.

4 (Recess taken at 10:30 a.m.)

5 (Resumed at 10:44 a.m.)

6 THE VIDEOGRAPHER: Back on the record at

7 10:44.

8 (Thereupon, a 35-page printout entitled

9 "Ripple: The Most Prestigious Team - General"

10 was introduced as DS Exhibit 36 for

11 identification.)

12 BY MR. TENREIRO:

13 Q. Okay. Mr. Schwartz, we handed you what was
14 premarked as Exhibit 36. It's another Xrp Chat
15 printout. I'm going to look -- this one has 35 pages.

16 My focus is on page 15, which appears to be a post
17 on May 5th -- May 21st, 2017. The prior exhibit, as I
18 think we discussed, was in April of 2017.

19 A. Uh-huh. Yes.

20 Q. Here, if you take a moment to read, it seems
21 like you're responding to someone who posted with a lot
22 of all caps.

23 You say, "This is a good argument that it doesn't
24 make sense for ordinary people to hold cryptocurrencies
25 yet. This is one of the reasons Ripple didn't pursue a

1 retail use case like Bitcoin did."

2 Can you please explain what you mean by "retail use
3 case"?

4 A. I mean a use case where people hold
5 cryptocurrencies and use them as money.

6 Q. And is this -- is it fair to say this was
7 your view in 2017?

8 A. Yes.

9 Q. Is that still your view today?

10 A. Yes.

11 Q. Okay. Does Ripple today sell XRP for people
12 to hold and use XRP as money?

13 A. Ripple sells XRP and some people do use it as
14 money.

15 Q. Does Ripple, when it sells XRP, look for
16 people that are going to hold and use it as money as the
17 buyers?

18 A. I don't --

19 If you're talking about programmatic sales, Ripple
20 doesn't choose the buyers.

21 Q. Yeah, so I'm talking about any sales. So
22 let -- we can talk about programmatic sales. Who
23 chooses the buyers?

24 A. They're chosen by the exchange.

25 Q. Does the exchange choose them or is it more

1 the buyers sort of choosing themselves by introducing
2 the transaction?

3 MR. CERESNEY: Objection to form.

4 THE WITNESS: You could describe it
5 either way.

6 BY MR. TENREIRO:

7 Q. Does Ripple provide the exchanges any
8 instructions that they -- you know, should choose the
9 buyers based on whether they're going to hold and use
10 XRP as money?

11 A. I can't imagine that they would be receptive
12 to that type of advice.

13 Q. Why?

14 A. Because they -- they operate algorithmically.

15 Q. You mean the exchanges?

16 A. Yes.

17 Q. By the way, the exchanges --

18 What interaction do they have with the XRP Ledger
19 for the purpose of selling the XRP to the buyers we were
20 discussing?

21 MR. CERESNEY: Objection to form.

22 THE WITNESS: My understanding is that
23 they receive XRP from people who wish to sell
24 it, then they send out XRP to people who have
25 purchased it and those transactions take place

1 on the XRP Ledger.

2 BY MR. TENREIRO:

3 Q. And just to be clear, when they receive XRP
4 from people who wish to sell it, does that include
5 Ripple's programmatic exchanges, programmatic sales?

6 A. I believe so.

7 Q. Okay. You referred to programmatic sales.

8 Are there any other type of XRP sales that Ripple
9 engages in?

10 A. Over-the-counter sales.

11 Q. With respect to the over-the-counter sales,
12 does Ripple sell XRP to people who would use -- hold and
13 use XRP as money?

14 MR. CERESNEY: Objection.

15 MR. GERTZMAN: Objection to form.

16 MR. CERESNEY: You used the present
17 tense. Is that what your intention --

18 MR. TENREIRO: Yes.

19 BY MR. TENREIRO:

20 Q. With respect to the counter sales, does
21 Ripple sell XRP to persons who would hold and use XRP as
22 money?

23 A. I don't --

24 MR. GERTZMAN: Objection to form.

25 THE WITNESS: I don't know the criteria

1 for our current over-the-counter sales.

2 BY MR. TENREIRO:

3 Q. And what about historically? Were there --

4 Were there criteria for the over-the-counter sales
5 related to whether people would hold and use XRP as
6 money?

7 MR. CERESNEY: Objection.

8 (Pause.)

9 THE WITNESS: I don't know.

10 BY MR. TENREIRO:

11 Q. Okay. Who would know?

12 A. I'm not sure who was in charge of
13 over-the-counter sales. Yeah, I'm not sure.

14 Q. So the person in charge of the
15 over-the-counter sales might know?

16 A. Well, they might not have chosen the
17 criteria, but I presume they would know what the
18 criteria were.

19 Q. Okay.

20 (Thereupon, an informal discussion was
21 held off the record.)

22 BY MR. TENREIRO:

23 Q. Mr. Schwartz, do you recall at times
24 referring to Ripple's gateway strategy with respect to
25 XRP?

1 A. Yes.

2 Q. Could you just for the record what you mean
3 by "gateway strategy"?

4 A. Yes. That was one of Ripple's first
5 strategies that deserves to be called a strategy. The
6 gateway strategy is that people would use the XRP Ledger
7 as a multi-asset ledger to transact largely in the
8 assets that they were traditionally comfortable, with
9 like dollars.

10 If they wanted cryptocurrencies, they could, and
11 the ledger would sort of act as a giant decentralized
12 exchange with XRP as the transaction fee currency and as
13 an intermediary asset.

14 Q. And is that --

15 Is that strategy different from what we discussed
16 earlier this morning, that you described generally as an
17 exchange on the ledger where there's a 10 million a day
18 volume?

19 A. Those are substantially the same thing.

20 Q. Those are substantially the same?

21 A. Yes. The gateway strategy and current
22 operation of the decentralized exchange are
23 substantially the same end result.

24 (Thereupon, a two-page document entitled
25 "Issuing Gateway vs. Private Exchange - Gateways

1 and Exchanges - Xrp Chat" was introduced as DS
2 Exhibit 60 for identification.)

3 BY MR. TENREIRO:

4 Q. Okay. Let's look at Exhibit 60, please.

5 A. Okay.

6 Q. This is an excerpt from Xrp Chat. I don't
7 know how this printed so neatly compared to the other
8 ones.

9 It's two pages, and it appears to be a post on
10 January 24th. I'm not sure what the year is. I believe
11 it's 2018, but I can't represent that to you.

12 A. Yes, I see that.

13 Q. Just by reading it, could you tell us what
14 year it was?

15 A. Well, since I did say we did pursue a gateway
16 strategy for several years, we began that strategy in
17 2014.

18 Q. Can I direct you to the bottom of the first
19 page where you say, "xRapid is our first big push to
20 connect payments to XRP settlement"?

21 And my only question is if that sort of clues you
22 in as to more or less when this post was made.

23 A. Well, it would have had to have been after we
24 used the term xRapid as well.

25 Q. Okay, so that's -- that's fine. So first,

1 you say, "Ripple is not targeting XRP at retail use"
2 and the word "retail" is in quotation marks.

3 Now, did you have the same meaning there as you did
4 in Exhibit 36 we saw a minute ago, when you say, "retail
5 use"?

6 (Pause.)

7 THE WITNESS: I think so.

8 BY MR. TENREIRO:

9 Q. And just for the record, does that mean --
10 does that mean hold and use XRP as money?

11 A. That means people holding and using XRP as a
12 means of payment beyond the decentralized exchange and
13 transaction fees.

14 Q. Okay. By the way, on the second page, it
15 appears that your response is in 2018. If you take a
16 look, there's an actual year marker there. Thank you.

17 A. I see that, yeah.

18 Q. Is that consistent with sort of your
19 recollection when this post might be?

20 A. That's certainly reasonable.

21 Q. Yeah. When you say, "There are a variety of
22 reasons for this, including the regulatory challenge,"
23 what -- what regulatory challenge -- is that the FinCEN
24 issue?

25 A. I believe it must have been, yeah.

1 Q. You say, "It's also because we -- at least
2 some of us -- don't think any cryptocurrencies are quite
3 ready for mass adoption through this route yet."

4 Is that a similar sentiment as what we saw in
5 Exhibit 36, your view that -- you know, cryptocurrencies
6 aren't ready to be used as cash?

7 A. Well, not -- not mass adoption.

8 Q. As opposed to some people might do it, but
9 not mass adoption?

10 A. Exactly. People who are specifically
11 interested might do so, but it wouldn't be ready from
12 like a mass retail use case.

13 Q. And here -- then, you say, "We did pursue a
14 Gateway strategy for several years."

15 So is that gateway strategy the exchange on the XRP
16 Ledger of assets for each other --

17 A. Uh-huh.

18 Q. -- that we were talking about?

19 A. Yes.

20 Q. Why did you say "did pursue" in the past
21 tense, if you're still pursuing it here?

22 A. This probably was after we stopped pursuing
23 that strategy.

24 Q. Oh.

25 A. Well, let me rephrase. It's not clear from

1 this that I necessarily mean that we weren't still --
2 and without -- without --

3 I would have to check the timeline for precisely to
4 know for sure. This is consistent with either us still
5 pursuing it or us having pursued it.

6 Q. The next sentence says:

7 "We had a very hard time on boarded gateways. An
8 unreliable gateway is probably worse than no gateway.
9 Gateways face challenges with regulatory compliance,
10 customer service, and finding a good revenue model,"
11 etc.

12 A. Uh-huh.

13 Q. Does that refresh your recollection as to
14 whether you were still pursuing -- as to whether Ripple
15 was still pursuing the gateway strategy at this point?
16 And.

17 Then I'll just note for you the next paragraph says
18 "So we pivoted to a strategy," etc.

19 A. Yeah, that's consistent with my understanding
20 of the time. But I hesitate to say that we completely
21 abandoned the gateway strategy.

22 Q. So is it your testimony that today, Ripple
23 has not completely abandoned the gateway strategy?

24 A. I am not saying that we -- I'm saying that I
25 can't conclude that we did completely abandon the

1 gateway strategy at that time.

2 Q. Has it abandoned it today?

3 A. No.

4 Q. Okay. It hasn't completely abandoned it, but
5 it has abandoned it somewhat? I'm trying to understand
6 what Ripple's current position is with respect to the
7 gateway strategy.

8 MR. CERESNEY: Objection to form.

9 THE WITNESS: I would say Ripple's --

10 Ripple's commitment to the gateway
11 strategy or focus on it has changed over time.

12 It first didn't exist, was very high,
13 dropped for a while in preference to the
14 RippleNet strategy, then came up again.

15 BY MR. TENREIRO:

16 Q. In preference to RippleNet strategy?

17 A. Yes.

18 Q. Is that the same as xRapid?

19 A. xRapid's a subset of the RippleNet strategy.

20 Q. Then you say, "came up again." The gateway
21 strategy came up again?

22 A. Yes.

23 Q. When was that?

24 A. I would say probably -- I mean it did a
25 little bit over a long periods of time, but I think

1 around the time we noticed that the gateway strategy --
2 the decentralized exchange was thriving despite our lack
3 of focus on it.

4 Q. Okay. Let's take a look, now, at a different
5 exhibit, which will be Exhibit 19.

6 (Thereupon, a document entitled "If Ripple
7 failed, XRP died - General Discussion - Xrp
8 Chat" was introduced as Exhibit 19 for
9 identification.)

10 BY MR. TENREIRO:

11 Q. This is an Xrp Chat and this is 28 pages. My
12 question is on page 12.

13 It appears to be posted June 3rd, 2016. The title
14 of the thread is "If Ripple failed, XRP died." You do
15 call them "threads," right, for Xrp Chat?

16 A. Yes.

17 Q. And do you call this -- let me --

18 When you're finished reading this part, my question
19 is if you recall this thread.

20 A. I don't specifically recall writing this.

21 Q. Okay. Have you had a chance to read your
22 post there?

23 A. Let me just -- let me just --

24 I've looked at the context. Let me just read my
25 particular post in its entirety. One second.

1 (Pause.)

2 THE WITNESS: Yes.

3 BY MR. TENREIRO:

4 Q. Okay. Let's start with "I don't think it's
5 likely XRP would succeed without us, though it is
6 possible."

7 What did you mean by that? How would it be
8 possible for XRP to succeed without Ripple?

9 MR. CERESNEY: Objection to form.

10 THE WITNESS: Today, I find it --

11 MR. CERESNEY: Do you want him to
12 answer -- you asked two questions, "What did
13 you mean by that?" and then the subsequent
14 question. Which one do you want him to
15 answer?

16 BY MR. TENREIRO:

17 Q. No, I'm asking back then. How -- how would
18 XRP subject succeed without Ripple in 2016?

19 A. Looking at this today, I'm surprised that I
20 would have said that in 2016. I believe in 2016 the
21 decentralized exchange was already in significant,
22 active use. Many exchanges were trading XRP. I --

23 Honestly, I'm -- I'm -- honestly, I'm very
24 surprised it's as late as 2016. That certainly isn't my
25 view today of what I would -- what I would have

1 thought -- what I think I would have thought today in
2 2016.

3 Q. Okay. But you did make this post, as far as
4 you know?

5 A. I did, as far as I know.

6 Q. Later, you say:

7 "I do think it's possible for us to succeed without
8 XRP succeeding as we do have other sources of revenue."

9 Is it fair to say that in 2016, XRP was one of
10 Ripple's -- selling XRP was one of Ripple's sources of
11 revenue?

12 A. I believe it was by 2016. I'm not sure.

13 Q. And -- okay. Then, you say:

14 "That said, our XRP is a significant asset." What
15 does it mean there -- what do you mean, "a significant
16 asset"?

17 A. I meant that Ripple held a significant amount
18 of XRP.

19 Q. Was it worth a significant amount in 2016?

20 A. I don't -- I don't recall. I suspect -- I
21 don't recall the price then.

22 Q. Okay. Did you monitor the price of XRP back
23 in 2016?

24 MR. CERESNEY: Objection to form.

25 MR. TENREIRO: What's the objection?

1 MR. CERESNEY: What the term "monitor"
2 means.

3 BY MR. TENREIRO:

4 Q. Did you look at the price of XRP online?

5 A. I believe I did check the price at the time,
6 from as soon as it was possible to do that to the
7 present.

8 Q. You still do that today?

9 A. Yes.

10 Q. Why?

11 A. Just to understand the sentiment in the
12 market.

13 Q. The sentiment as to what, as to XRP?

14 A. Well, as to the entire cryptocurrency space.

15 Q. Okay. What other digital asset prices do you
16 look up online from time to time?

17 A. Primarily, Bitcoin, Ethereum, and XRP. I
18 think those are the three that I would look at most.

19 Q. And do you hold XRP today?

20 A. Yes, I do.

21 Q. How much?

22 A. I believe approximately [REDACTED]

23 Q. And over the course of your employment --
24 over the course of your life, how much XRP had you sold?

25 A. Probably about [REDACTED]

1 Q. [REDACTED] XRP?

2 A. It's probably a little more than that. Maybe

3 [REDACTED]

4 Q. And in exchange for what did you sell that
5 XRP?

6 A. Either Bitcoin or U.S. dollars.

7 Q. How much in U.S. dollars?

8 A. I think about [REDACTED]

9 Q. And how much in Bitcoin?

10 A. That I don't know, but much less.

11 Q. Much less in the equivalent of dollars to
12 Bitcoin?

13 A. Yes, yes. It's -- it's just challenging
14 because the price of Bitcoin is also variable.

15 Q. Yeah?

16 A. So it's hard -- it's less in terms of the
17 magnitude of value.

18 Q. Okay. Where did you sell -- how -- how did
19 you sell your XRP?

20 A. Either on exchanges or on the decentralized
21 exchange.

22 Q. If you used exchanges, which ones did you
23 use?

24 A. I believe I predominantly used Bitstamp and
25 Coinbase Pro, Kraken probably third.

1 Q. Back to the exhibit. You say:

2 "Our XRP strategy is based on promoting it as a
3 bridging currency." Do you see that part? It's the
4 second paragraph, third sentence?

5 A. Yes.

6 Q. What do you mean by "our XRP strategy"?

7 Whose?

8 A. Ripple's.

9 Q. Okay. Here you're talking on behalf of
10 Ripple or on behalf of yourself?

11 A. I think here I think I'm describing what
12 Ripple's strategy is, which is -- I hesitate to put it
13 in one of two buckets, but I am an employee of Ripple,
14 describing what my view of what Ripple's strategy is.

15 Q. Right. At this point, had Ripple achieved
16 adoption of XRP as a bridging currency?

17 I understand you're talking about --

18 MR. CERESNEY: Objection.

19 BY MR. TENREIRO:

20 Q. -- promoting it.

21 MR. TENREIRO: Sorry.

22 MR. CERESNEY: Objection to form.

23 BY MR. TENREIRO:

24 Q. I understand that you're talking here about
25 promoting it as a bridging currency. You talk about

1 significant technical obstacles and other ways in which
2 the strategy might work.

3 My question is: At this point, had Ripple actually
4 achieved adoption of XRP as a bridging currency?

5 MR. CERESNEY: Objection to form.

6 THE WITNESS: Yes and no. "Yes," to the
7 extent that people were using it as a bridging
8 currency.

9 "No," to the extent that Ripple didn't
10 have a product that would allow people to do
11 that at that time. At least, I don't believe
12 we did in 2016.

13 BY MR. TENREIRO:

14 Q. Is that yes to the part that's on the
15 exchange we were talking about?

16 A. Yes. It would be the part on the
17 decentralized exchange.

18 And possibly people doing it other ways, too, but I
19 wouldn't want to say -- I wouldn't know, but I know
20 people were doing it on the decentralized exchange.

21 Q. Did Ripple -- you know, develop that
22 decentralized exchange?

23 A. We developed the decentralized -- well, the
24 decentralized exchange was developed by myself and
25 [REDACTED] who subsequently became Ripple employees,

1 but we didn't -- we didn't -- but I believe this --
2 well, this is 2016. Sorry. I lost my train of thought.
3 Can you --

4 Q. Yeah, yeah, yeah, so -- you know.

5 I had asked you if Ripple at this point had
6 achieved adoption of XRP's bridging currency. You said,
7 "Yes, to the extent that people were using it as a
8 bridging currency; no, to the extent Ripple didn't have
9 a product."

10 That confused me a little bit, because I thought
11 the exchange itself was one of Ripple's products.

12 A. The decentralized exchange?

13 Q. Yeah.

14 A. Not really, because that predates the
15 company. That was developed largely by myself and
16 [REDACTED] in early 2013.

17 And then adoption occurred initially with Ripple
18 suggesting the adoption and then with Ripple pivoting to
19 RippleNet strategy, but then adoption continued despite
20 Ripple's lack of effort.

21 Q. Okay. Understood.

22 A. So if you want to attribute that success to
23 Ripple or not, it is what it is.

24 Q. Yeah, I understand.

25 Does Ripple earn revenue from that decentralized

1 exchange from people using it?

2 A. No.

3 Q. Has it ever, as far as you know, earned
4 revenue from people using the decentralized exchange?

5 A. Not to my knowledge.

6 Q. Did there come a point in time where Ripple
7 earned revenue from people using XRP as a bridging
8 currency?

9 A. Yes.

10 Q. And when was that?

11 A. Once xRapid was live.

12 Q. What was the source of revenue through
13 xRapid?

14 A. It would have initially been things like
15 licensing fees and there may have been per transaction
16 fees.

17 Q. Order of magnitude, do you know how much
18 revenue Ripple has earned through xRapid?

19 A. No, I would have to guess.

20 Q. Towards the end of the post, you say -- I
21 guess towards the bottom of the page -- "We do not plan
22 to encourage use of XRP as an alternative to Bitcoin or
23 as a direct payment method at this time."

24 Was that statement true in 2016?

25 A. I believe so, yes.

1 Q. Okay. Let's move on. Well, let me ask you
2 this:

3 Why are you publicly talking about the strategy
4 that Ripple has?

5 MR. CERESNEY: Hold on. I just took --

6 MR. TENREIRO: Yeah, sorry.

7 (Thereupon, an informal discussion was
8 held off the record.)

9 BY MR. TENREIRO:

10 Q. Yeah, page 12. You say:

11 "Our XRP strategy is based on promoting it as a
12 bridging currency."

13 Why are you even talking publicly about the
14 strategy Ripple has at this time?

15 A. When people say something that I know the
16 truth on that's not correct, I have an uncontrollable
17 instinct to correct them.

18 I call it "Code Red." Someone's wrong on the
19 Internet. I know it's a thankless and eternal task, but
20 I literally cannot help it.

21 Q. I will save my comments for off the record on
22 that.

23 Is there any other reason why you publicly explain
24 Ripple's plans from time to time?

25 A. I do feel like it's within -- I do feel like

1 it's something that I should do as a -- you know, as a
2 well known employee of the company.

3 Q. Why? Why should -- I mean, why do you feel
4 that?

5 A. I don't really know.

6 Q. Well -- okay. Why -- and do you have a view
7 as to whether -- sort of its a good idea to have
8 accurate information about the company -- you know, out
9 in public?

10 A. Yeah. Yes, I do think people should have
11 accurate information rather than inaccurate information.

12 Q. Okay, so would you say -- I'm going to switch
13 gears for a second.

14 MR. CERESNEY: Are you done with this
15 exhibit?

16 MR. TENREIRO: I think so.

17 BY MR. TENREIRO:

18 Q. Would you say that when the ledger -- the XRP
19 Ledger -- was launched, the public -- would you
20 describe -- would you describe it as a centralized
21 ledger or decentralized?

22 A. At the time, I would have described it as
23 centralized. Today, I would describe it as
24 decentralized.

25 Q. You would describe it as decentralized

1 whether it was launched?

2 A. Soon as the source code was generally
3 available outside the company.

4 Q. That's the moment you describe it as
5 decentralized?

6 A. It is hard -- I will concede it's challenging
7 to draw a bright line, but if you want to draw a bright
8 line, that's where I would draw it.

9 Q. Okay, I could ask for a bright line, but
10 that's fine. My question is -- let's do this:

11 Is it fair to say that at times, people will say
12 that whether something is centralized or decentralized
13 is suggestive?

14 A. Yes.

15 Q. And whether I say people, I mean people --
16 you know, in the academic literature, for example?
17 People say that -- whether something is centralized or
18 decentralized is subjective?

19 A. There is no one consistent definition of
20 centralized and decentralized that everybody means every
21 time they use those terms.

22 Q. And when the ledger was launched, why would
23 you describe it as centralized back then? Even though I
24 understand that today, you don't have that view.

25 A. Back then, I would have described it as

1 centralized, because the notion of centralization of
2 decentralization wasn't very -- wasn't very precisely
3 defined.

4 Q. But there was enough -- there must have been
5 some definition such that you would have taken your view
6 though to be centralized?

7 A. That's correct.

8 Q. What about your view back then about these
9 concepts made you think back then that it was a
10 centralized ledger?

11 A. The primary one would be that had Ripple
12 stopped existing, gone away, disappeared, it's unlikely
13 that anyone else would have continued the project.

14 Q. Why?

15 A. They would have had no reason to. They just
16 wouldn't have been interested in doing so.

17 Q. Was one of the reasons because the XRP Ledger
18 wasn't doing much back then?

19 MR. CERESNEY: Objection to form.

20 BY MR. TENREIRO:

21 Q. What are the reasons people would have had no
22 interest?

23 A. I think it's fair to say that a person would
24 have interest if they were using it for something that
25 was important to them, and if they weren't using it for

1 something that was important to them, just out of sheer
2 interest in the technology or -- they could if they
3 wanted to, but it's simply unlikely that they would
4 have.

5 Q. At what point did your understanding of the
6 concepts of centralization and decentralization change
7 such that your view of what the ledger was originally
8 also changed?

9 A. I think they continuously evolved throughout
10 the entire time period, and it's hard for me to place --

11 And that's reflected in many of my posts, where I
12 think you'll find later on I talk more about "Well, if
13 by 'decentralization' you mean this, then this means
14 something else."

15 I understood that it was more nuanced and there
16 were different notions of centralization and
17 decentralization.

18 Q. This -- this sort of evolving
19 understanding -- did you derive it from sort of --
20 where, again, reading academic literature, conversations
21 with fellow computer programmers? How is it that it
22 changed?

23 A. Right, from -- from all of those things.

24 I think the biggest one was just thinking about why
25 does it matter is something is decentralized, what does

1 a person actually care about, then that should inform --
2 the definition should be a thing that you actually care
3 about.

4 Q. Okay, and is it -- does Ripple care about
5 whether the public perceives the XRP Ledger as
6 centralized or decentralized?

7 MR. CERESNEY: Objection, form. He asked
8 you whether Ripple cared.

9 THE WITNESS: I believe that -- that
10 people at Ripple, including myself, care that
11 people have an accurate understanding of the
12 status of the ledger. If somebody wants to
13 take the trouble to make a false statement,
14 then we'll correct that false statement.

15 BY MR. TENREIRO:

16 Q. Separate from caring about accurate
17 understandings, my question is:

18 Do people at Ripple, such as yourself, care about
19 whether the public perceives the XRP Ledger is
20 centralized or decentralized?

21 MR. CERESNEY: Objection.

22 MR. GERTZMAN: Objection.

23 MR. CERESNEY: You're asking people at
24 Ripple such as himself. Are you just asking
25 him?

1 MR. TENREIRO: No, I'm asking him about
2 Ripple, because he could have had
3 conversations with other people where they
4 might have said, "Hey -- you know. My name is
5 Monica Long. I really want there to be this
6 perception in the public."

7 MR. CERESNEY: If you can, answer the
8 question.

9 MR. GERTZMAN: Just note my objection to
10 the form.

11 MR. CERESNEY: Yeah. I objected, Mike.

12 THE WITNESS: I mean, I can --

13 I can say specifically that there were
14 Ripple efforts to communicate the status of
15 the ledger -- to accurately communicate the
16 status of the ledger centralization or
17 decentralization at various times.

18 BY MR. TENREIRO:

19 Q. And why did Ripple make those efforts?

20 A. I think largely to combat the false narrative
21 that it was centralized.

22 Q. And were there other reasons? Not largely,
23 but something else?

24 A. I don't -- I don't believe so.

25 Q. Okay. Do you know whether Ripple made

1 efforts to communicate the status of the ledger,
2 centralization or decentralization, in order to promote
3 a litigation strategy?

4 MR. CERESNEY: Objection.

5 You should not reveal any discussions
6 with counsel.

7 THE WITNESS: I do not believe we did
8 that.

9 (Pause.)

10 (Thereupon, a printout from Bitcoin Forum
11 entitled "Latest Posts of JoelKatz" dated May
12 20, 2013" was introduced as Exhibit 6 for
13 identification.)

14 BY MR. TENREIRO:

15 Q. Let's look at Exhibit 6, please. This is
16 from the Bitcoin forum, "Latest posts of JoelKatz," and
17 these are a series of posts in May 2013.

18 There's eight pages to the exhibit. I am going to
19 ask you about something on page 3.

20 (Pause.)

21 BY MR. TENREIRO:

22 Q. Also on page 6. We can start with three, if
23 that's okay.

24 A. Okay.

25 Q. Is it fair to say the way this is

1 presented -- it's sort of you responding to something
2 someone else said?

3 A. Yes.

4 Q. Okay, so on the top of page 3, you say --

5 (Thereupon, an informal discussion was
6 held off the record.)

7 MR. TENREIRO: Oh, I'm sorry. Yes. For
8 the SEC person displaying them, it's six,
9 please.

10 My understanding of how this works is you
11 could -- maybe Mr. Schwartz has a different
12 understanding.

13 But my understanding is you can select a
14 user and you can sort of concatenate their
15 posts, and it's not the threads. You'd have
16 to click on the actual title of threads to see
17 the whole thread. This is just their post on
18 various threads.

19 (Thereupon, an informal discussion was
20 held off the record.)

21 BY MR. TENREIRO:

22 Q. It shows what -- it says:

23 "Larsen can't have it both ways," and then, he
24 says, "You're assuming OpenCoin will be a Ripple central
25 authority forever."

1 So we can go to page 3 of this exhibit, please,
2 towards the top.

3 A. Yes.

4 Q. There we go.

5 When you say, "You are assuming OpenCoin will be a
6 Ripple central authority forever," do you see that?

7 A. Yes.

8 Q. OpenCoin was that the name for Ripple before
9 it was called Ripple?

10 A. Yes.

11 Q. Okay. What do you mean by "central
12 authority"?

13 (Pause.)

14 THE WITNESS: I'm really not precisely
15 sure. Yeah, I'm really not. I'm not sure.

16 BY MR. TENREIRO:

17 Q. You're not sure what you mean by "central
18 authority," sitting here today?

19 A. Yeah, let me read what I am responding to,
20 again.

21 MR. CERESNEY: Take your time.

22 (Pause.)

23 THE WITNESS: I think I meant the most
24 interested party, the party participating the
25 most in development.

1 But I'm not really sure today what I
2 meant by that at that time.

3 BY MR. TENREIRO:

4 Q. Here, does the word "ripple" refer to XRP?

5 A. "Ripple" refers to the XRP Ledger.

6 Q. The XRP Ledger?

7 A. I think so.

8 Q. There was a moment in time when XRP was
9 referred to as "ripples"?

10 A. People have referred to them that way, yes.
11 Ripple credits or -- yeah, the name's changed a number
12 of times.

13 Q. Did Ripple have any role in sort of ensuring
14 that the public did not use the word "ripples" or
15 "ripple credits" instead of XRP?

16 MR. CERESNEY: Objection to the form.

17 MR. GERTZMAN: Objection to the form.

18 THE WITNESS: My recollection is there
19 came a time when we -- when we treated
20 "Ripple" as a company trademark.

21 BY MR. TENREIRO:

22 Q. Okay. When you say, "That is absolutely not
23 our plan," who is "our" referring to?

24 A. This is early 2013, so I'm not -- I can tell
25 you -- I don't know if it was -- well, I'm referring to

1 OpenCoin, so I must have meant OpenCoin.

2 Q. Okay, and what do you mean by "That is
3 absolutely not our plan"?

4 A. OpenCoin's intention was always -- was always
5 to -- to reduce its own role.

6 Q. With respect to what?

7 A. Well, in the early days, OpenCoin's role
8 was -- primary role was to distribute XRP, so as that
9 job wound to a close, OpenCoin wouldn't have anything
10 left to do.

11 Q. Has that job wound to a close today?

12 A. No.

13 Q. When -- when is it going to?

14 A. It's impossible to say.

15 Q. Okay. Would you say it's going to be in the
16 next few years?

17 MR. CERESNEY: Objection.

18 THE WITNESS: Very hard -- very hard to
19 say.

20 BY MR. TENREIRO:

21 Q. Okay. Page 6, please. This response is to a
22 quote on May 16th. The quote says:

23 "Thanks for the clear responses." Your response
24 says:

25 "We will do what we can to drive adoption."

1 A. Yes.

2 Q. Then you say -- I'm skipping a sentence.

3 You say, "We plan to develop client and server
4 software for as long as necessary." Who is the "we"
5 there?

6 A. I suspect I'm speak on behalf of OpenCoin.

7 Q. "Server software"? Does that refer to the
8 XRP Ledger?

9 A. At least that, yeah.

10 Q. I'm sorry? At least?

11 A. At least that, yeah. Could include other
12 software, but yes.

13 Q. Is this still the plan that Ripple has today,
14 to continue to develop server software, client and
15 server software for the XRP Ledger?

16 A. Yes.

17 Q. It says "for as long as necessary"?

18 A. Yes.

19 Q. What does that mean? Who determines -- who
20 determines whether it's still necessary?

21 MR. CERESNEY: Objection to form.

22 MR. TENREIRO: Actually, let me strike
23 that.

24 BY MR. TENREIRO:

25 Q. How do you determine if it's still necessary

1 for Ripple to do these things?

2 MR. CERESNEY: Objection.

3 THE WITNESS: Yeah, I don't -- I -- I --

4 I don't really know.

5 BY MR. TENREIRO:

6 Q. And do you know who determines it, whether
7 it's still necessary or not?

8 A. Well, if -- well, OpenCoin, now Ripple, would
9 determine its own plan, so that would be the term nation
10 we would make, whether we felt we needed to do that
11 authority.

12 Q. Further down, Post 696, you say, "The price
13 of XRP is just a matter of supply and demand." Do you
14 see that?

15 A. Yes.

16 Q. What -- what does that in layman's terms? Is
17 it just Adam Smith?

18 A. Yeah.

19 Q. Supply and demand determine the price of an
20 asset?

21 A. Yes.

22 Q. Okay. Typically, under this sort of theory,
23 if demand goes up what happens to the price and
24 everything else stays equal?

25 A. If everything else stays equal, an increase

1 in demand would translate to an increase in price --
2 again, if everything else stays equal.

3 Q. You say, we believe that broad adoption of
4 Ripple as a payment platform will drive demand.

5 What does Ripple refer to there? Is that the
6 ledger or XRP?

7 A. The ledger.

8 (Thereupon, an informal discussion was
9 held off the record with the shorthand
10 reporter.)

11 BY MR. TENREIRO:

12 Q. And will drive demand for what?

13 A. I don't say here.

14 Q. Can you tell me from context what you meant?

15 A. I don't -- I don't recall.

16 Q. Okay. I understand you don't recall, but
17 does the context clue you in as to what you meant or
18 not?

19 A. I mean, you could draw the conclusion as
20 easily as I can. I don't what I -- what I meant by
21 that.

22 Q. Okay. Is it still true today that the price
23 of XRP is just a matter of supply and demand?

24 A. I hesitate to use the word "just." Supply
25 and demand are factors that influence price, but I think

1 the world is not as simple as a quote from Adam Smith.

2 Q. Is it fair to say the price of XRP today is
3 in part a matter of supply and demand?

4 MR. CERESNEY: Objection to form.

5 BY MR. TENREIRO:

6 Q. As far as you understand?

7 A. I believe those are factors that affect the
8 price.

9 Q. What other factors do you believe affect the
10 price today?

11 A. Well, it's extremely complicated because if
12 you look at the prices of digital assets, they don't --
13 they seem to move despite what don't look like changes
14 and the supply or demand for those particular assets.

15 There are a lot of specific examples where there
16 were drastic changes in the supply or demand of digital
17 assets and then there was no change in the price, so
18 something else is going on.

19 Q. Fair enough. Was Ripple a central authority
20 with respect to the XRP Ledger at this point in time?

21 MR. CERESNEY: Objection.

22 BY MR. TENREIRO:

23 Q. As far as you used those terms, "central
24 authority"? We're going back to page 3.

25 A. I think there was a sense --

1 I think there's some sense in which you could make
2 that term meaningful and other senses which you could
3 not.

4 Q. What are those senses?

5 A. In which you could or...

6 Q. Could not.

7 A. Well, for example, as I understand
8 decentralization today, if Ripple went away, other
9 people could have continued the ledger, had they wished
10 to do so.

11 For example, had Ripple made a rules change, people
12 could have resisted that change. They wouldn't have had
13 to do what Ripple wanted them to do. So in that sense,
14 we were not a central authority.

15 Q. Were there other nodes validating ledger
16 transactions at that time?

17 MR. CERESNEY: "Other nodes"? Other
18 than?

19 MR. TENREIRO: Yeah, other than the ones
20 Ripple was using -- running.

21 THE WITNESS: I know there was at least
22 one for sure. There might have been others.

23 BY MR. TENREIRO:

24 Q. How many were there?

25 A. I don't know.

1 Q. All right.

2 Let's talk about the consensus mechanism for a
3 minute. Could you describe it in your own terms,
4 please? What's the consensus mechanism for the XRP
5 Ledger?

6 A. The consensus mechanism for the XRP Ledger --

7 It's very hard to describe it -- to describe
8 something shortly, but it's the method by which the XRP
9 Ledger reaches -- advances -- advances itself and
10 reaches new confirmed ledgers that people can rely on.

11 Q. I'm sorry. Reaches new ...

12 MR. CERESNEY: You have to speak a little

13 louder and --

14 BY MR. TENREIRO:

15 Q. That last part.

16 A. Confirmed ledgers that people can rely on.

17 Q. What method of reaching consensus does the
18 XRP Ledger utilize?

19 A. The method is sometimes described as

20 "Federated Byzantine Agreement."

21 (Thereupon, an informal discussion was
22 held off the record with the shorthand
23 reporter.)

24 THE WITNESS: What that means is -- what

25 that means is there's sort of a continuous --

1 It's very analogous to a discussion with
2 human beings where they would actually agree
3 on something. They would literally come to an
4 agreement on it.

5 BY MR. TENREIRO:

6 Q. The Byzantines didn't seem to agree on much,
7 though, did they?

8 A. Sorry. That describes the challenge, not so
9 much the solution.

10 Q. Does Ripple --
11 Does the Ripple Ledger use Proof of Work to
12 establish consensus?

13 A. No.

14 Q. Why not?

15 Whose idea was it for -- to use the consensus
16 mechanism it does use?

17 A. [REDACTED] had the original idea to
18 replace -- to take something Bitcoin-like and replace
19 Proof of Work with some sort of distributed agreement
20 algorithm.

21 Q. Does he use Proof of Stake?

22 A. No.

23 Q. Why not?

24 A. For one thing, Proof of Stake didn't exist at
25 the time.

1 Q. That's a good answer. But today, why doesn't
2 it?

3 A. Because Proof of Stake makes the stakeholders
4 the people who hold the digital asset rather than the
5 people who use the system.

6 Q. And why would one want to make the
7 stakeholders those who use the system as opposed to
8 those who hold the asset?

9 A. It's my belief that it produces a better
10 system when the people who use the system and get value
11 out of it are the primary stakeholders as opposed to
12 those who just hold an asset.

13 Q. Is it fair to say that to run a node of any
14 type on the ledger today you don't have to hold XRP?

15 A. Correct.

16 Q. And now there's -- how many nodes are on the
17 ledger today?

18 A. Last I checked, there was something like 15
19 hundred, but I couldn't tell you for you are sure what
20 it is today.

21 Q. How many of those nodes are actually
22 validating ledger transactions?

23 A. Last I checked, it was about 160 or so.

24 Q. What are the other nodes doing?

25 A. Let me back up a little bit. They are all

1 validating in the sense that they are checking whether
2 the transactions are valid.

3 But whether or not they are validators -- there's
4 only about 170 of them.

5 Q. And the distinction being what?

6 A. Every node checks whether every transaction
7 is valid, and a node will not take another node's word
8 whether a transaction is valid or not.

9 But the validators participate in coming to a
10 consensus to break ties, so the double spin comment.

11 Q. And how many of the hundred or so -- did you
12 say 150?

13 A. I think it's about 170.

14 Q. Okay. How many of the 170 of these nodes are
15 actually confirming transactions?

16 A. All -- all validators are confirming
17 transactions.

18 Q. Okay. Let's look at Exhibit 9.

19 (Thereupon, a two-page document entitled
20 "XRP Ledger Amendment" was introduced as DS
21 Exhibit 9 for identification.)

22 BY MR. TENREIRO:

23 Q. Exhibit 9, please.

24 A. I see that.

25 Q. What's XRP scanned?

1 A. I can tell you what it appears to be from
2 this document. I don't have any independent knowledge.

3 Q. Okay. What does it appear to be?

4 A. It appears to be a tool that at least among
5 other things can report on the status of proposed
6 changes to the XRP Ledger.

7 Q. Does Ripple have any such tool?

8 A. I'm not sure. I think we do.

9 Q. Is that fair --

10 From that, may I infer fairly that you have not
11 participated in the creation of such a tool?

12 A. That is correct.

13 Q. Okay. What is --

14 Just from looking at this document, what does this
15 appear to represent to you?

16 A. This appears to represent the -- the sum
17 subset of the validators appearing on the XRP Ledger and
18 whether -- whether or not they support or oppose a
19 proposed change to the software's operation.

20 Q. Okay. There's 28 yeas and nine nays. Do you
21 see that?

22 A. On mine, I see 19 yeas.

23 Q. If you turn the page?

24 A. Oh, I see. Yes, there's 28 yeas and nine
25 nays.

1 Q. So do you know what the subset of 37
2 validators are?

3 A. Given the -- I don't independently know, but
4 I suspect, given the context, someone's recommended UNL.

5 Q. Do you know if Ripple recommended UNL?

6 A. I don't know for sure.

7 Ripple's UNL has changed over time. It's similar
8 to many other recommended UNLs, so it's hard for me to
9 know whether this was specific. It certainly could have
10 been.

11 Q. How many validators are in Ripple's UNL
12 today?

13 A. My last recollection was that it was 35. It
14 may have changed. That may not be exactly correct at
15 this moment.

16 Q. If the 35 nodes on that list all have the
17 same UNL list, which is the 35 of them, what function is
18 left for the other validators in that 150 or so group to
19 do with respect to validating the transactions on the
20 XRP Ledger?

21 A. Based on --

22 MR. CERESNEY: Hold on. 170?

23 THE WITNESS: However --

24 BY MR. TENREIRO:

25 Q. However many?

1 A. Yeah.

2 Q. We don't have to determine the exact amount.

3 A. They still determine whether every
4 transaction is valid or not for their own purposes.

5 Q. Other than that, what role do they play?

6 A. That would be the only role.

7 Q. If they determine it's not valid for their
8 own purposes, what would they do?

9 A. They would ignore it.

10 Q. And for -- and enter -- you know, believe a
11 different state of the ledger?

12 A. Depending on how they are configured, the
13 ledger has significant protection against an accidental
14 fork.

15 So unless they intended to fork, they would -- they
16 would simply report that something was wrong, and they
17 would --

18 Q. To whom?

19 A. To their operators, and they would cease
20 operation.

21 Q. Okay. Reading the list here today, do you --

22 Do you know if some of these validators are on
23 Ripple's UNL today?

24 MR. CERESNEY: Jorge, what is the date of
25 this document?

1 MR. TENREIRO: I printed this on the 23rd
2 of May.

3 MR. CERESNEY: But it summarizes some
4 amendments. Do we know when that was
5 introduced and when the nodes were?

6 MR. TENREIRO: I think it's ongoing.

7 THE WITNESS: Yeah, this could -- this
8 probably was the statement at the time we
9 printed it. That's what it looks like. It's
10 hard to say for sure.

11 MR. CERESNEY: It was still an ongoing
12 process?

13 MR. TENREIRO: It was ongoing on the
14 23rd. I know there's a two-week thing, but --

15 THE WITNESS: There is.

16 MR. CERESNEY: Do you know what this
17 amendment is?

18 THE WITNESS: I'm not certain.

19 MR. CERESNEY: It's just I --

20 MR. TENREIRO: Do you know --

21 Well, I'm not asking about the amendment.
22 I'm asking about the validators. So if he
23 recognize these names as validators, it might
24 be on Ripple's UNL.

25 MR. CERESNEY: You're asking whether any

1 of these validators are on Ripple's UNL?

2 MR. TENREIRO: Yeah.

3 MR. CERESNEY: Okay.

4 THE WITNESS: I know some of them have
5 been on our UNL at times, and there are
6 several that I believe are still on our UNL.

7 BY MR. TENREIRO:

8 Q. Well, let's do this. Let's just set this
9 aside for a second. What is the UNL list, for the
10 record?

11 A. The -- a node to a UNL list is the list of
12 validators that it has chosen to listen to break ties on
13 the double spin problem, so ...

14 Q. And does Ripple publish a UNL list?

15 A. Yes.

16 Q. Is that referred to as the "dUNL" list?

17 A. Some people refer to it as that.

18 Q. Lower case D?

19 A. Yes.

20 Q. Why do people call it that?

21 A. Because there were times when it was the
22 UNL -- it may still be true, where it's the UNL list you
23 get if you don't choose one.

24 Q. So the default --

25 A. Yes.

1 (Inaudible crosstalk.)

2 BY MR. TENREIRO:

3 Q. Why does Ripple publish this list?

4 A. Just to simplify administration of the XRP
5 Ledger software.

6 Q. Okay. Does Ripple use the XRP Ledger
7 software?

8 A. Yes.

9 Q. Is it fair to say Ripple has a stake in the
10 XRP Ledger?

11 MR. CERESNEY: Objection to form.

12 THE WITNESS: I would say any -- I
13 would -- I have said at times that every XRP
14 holder has a stake in the ledger.

15 BY MR. TENREIRO:

16 Q. That includes Ripple?

17 A. Certainly, that would include Ripple.

18 Q. Does Ripple have a financial interest in the
19 ledger?

20 MR. CERESNEY: Objection to form.

21 THE WITNESS: I mean, it's kind of a
22 vague term, but I ...

23 BY MR. TENREIRO:

24 Q. Does it have a financial interest in the
25 ledger operating/functioning correctly?

1 A. I think so.

2 Q. Does it have a reputational interest in the
3 ledger functioning correctly?

4 MR. CERESNEY: Objection to form.

5 THE WITNESS: I think so.

6 BY MR. TENREIRO:

7 Q. From your conversations at the company, do
8 you have any idea whether --

9 MR. TENREIRO: Well, let me strike that.

10 BY MR. TENREIRO:

11 Q. Let's go back to my question. Who else is
12 publishing UNL lists today?

13 A. I -- I don't necessarily know if everybody
14 could be publishing the UNL list. I know COIL publishes
15 one, and I know the [REDACTED] publishes one.

16 Q. What is COIL?

17 A. COIL is a company that uses [REDACTED]

18 Q. What is [REDACTED]?

19 A. [REDACTED] is a payment protocol that
20 allows -- that doesn't use a ledger.

21 Q. Does not use a blockchain?

22 A. It can use assets that trade on a block
23 change but doesn't itself.

24 Q. Is that the xCurrent software platform?

25 A. There are historical ties between them, but

1 they have gone their separate ways since then.

2 Q. Historical ties between xCurrent and the
3 software or platform that COIL uses?

4 A. [REDACTED], yes. Severed all ties between
5 them.

6 Q. What commercial relationship, if any, does
7 COIL have with Ripple?

8 MR. CERESNEY: Objection.

9 THE WITNESS: I believe Ripple has
10 invested in COIL.

11 BY MR. TENREIRO:

12 Q. What about -- what commercial relationship,
13 if any, does Ripple have with the XRP Ledger Foundation?

14 MR. CERESNEY: Objection to form.

15 THE WITNESS: Ripple has donated -- I
16 believe Ripple has donated to the [REDACTED]

17 [REDACTED].

18 BY MR. TENREIRO:

19 Q. How much?

20 A. I recall seeing the figure \$1.2 million, but
21 I don't know if that was a proposed donation. I don't
22 know.

23 Q. How much has Ripple invested in COIL?

24 A. I knew at one time. I don't recall, though.

25 Q. Do you know if COIL's UNL list is identical

1 to the [REDACTED]?

2 A. I have not compared them.

3 Q. Do you know what overlap between COIL's and
4 Ripple's UNL lists?

5 A. I have not compared them.

6 Q. How many of the validators on Ripple's
7 proposed UNL list are on the lists of the other nodes?

8 MR. CERESNEY: When you say, "the other
9 nodes" --

10 MR. TENREIRO: 150 or 170 or so.

11 THE WITNESS: I believe the three
12 published UNL lists I've talked about are at
13 least substantially identical. I don't
14 believe that they are identical. I don't know
15 more detail than that.

16 BY MR. TENREIRO:

17 Q. They have to be substantially identical for
18 the ledger to move forward, right?

19 A. Not unless -- assuming there's no -- assuming
20 there's no intent to disagree.

21 Q. And it's --

22 Is it fair to say that Ripple employees have
23 reached the conclusion the overlap has to be about 90
24 percent?

25 A. Between 80 and 90 percent. Again, unless

1 there's a decision to deliberately disagree.

2 Q. Set that aside for now.

3 Do you know how many of the validators, of the 150
4 or 170, use Ripple's dUNL?

5 A. I have no idea.

6 Q. Is it still the default list?

7 A. I believe so.

8 Q. Why?

9 A. Because Ripple -- Ripple -- I mean, there has
10 to be some default.

11 Q. That's true. Is there an infrastructure
12 currently in place to manage validator lists?

13 A. Yes.

14 Q. What is it?

15 A. Everybody who publishes in UNL has some
16 mechanism to keep track of which validators they keep on
17 their list and why, and to actually --

18 The UNL itself has to be produced in a certain
19 digital format in order to be accepted so they have the
20 infrastructure to produce it in that format.

21 Q. The digital format is what, a JSON file?

22 A. My recollection --

23 It's been a while, is that the human input would
24 typically be a JSON file, and there's a cryptographic
25 process that converts it into a digital format and signs

1 it, but underneath it is a JSON file.

2 (Thereupon, an informal discussion was
3 held off the record.)

4 BY MR. TENREIRO:

5 Q. How many of the current nodes on Ripple's UNL
6 list are operated by Ripple itself?

7 A. I -- one second. I think between three and
8 five.

9 Q. Of the 35 or so?

10 A. Or so, yes. I know -- I know it dropped
11 below 20 percent fairly recently.

12 Q. Right. Was it after this litigation began?

13 A. I don't know. I don't think so, but I don't
14 know.

15 Q. And how many --

16 How many of the nodes on Ripple's dUNL are operated
17 by entities with whom Ripple has a commercial
18 relationship, such as COIL?

19 A. I don't know.

20 Q. Who decides --

21 How does Ripple decide what validators it should
22 put on its dUNL list?

23 A. We look at things like history of reliable
24 operation, jurisdiction, some sort of commitment. We
25 don't want them to just disappear. Those are the

1 factors that go into our decision.

2 Q. How do you gauge commitment?

3 A. Depends on -- if it's --

4 If it's an institution, like if it's a university,
5 some sort of commitment from that institution as opposed
6 to just someone there who's like, "I want to run a
7 validator."

8 Q. Commitment to whom or to what?

9 A. Commitment to the validator -- to operating
10 the validator.

11 Q. How could you -- how could you know --

12 How could Ripple know if they are committed to
13 that?

14 A. We would ask them.

15 Q. Okay. Who at Ripple asks them?

16 A. I think at --

17 I think, at times, it's been [REDACTED]. His last
18 name's escaping me at the moment. More recently,

19 [REDACTED]

20 Q. Do they -- does Ripple enter into any sort of
21 commercial agreement with these -- the universities to
22 make sure that the commitment is true, or is it informal
23 conversations, as far as you know?

24 A. As far as I know, it's informal. It's
25 informal.

1 Q. Does the amount of holding of XRP -- of any
2 of the person or institution or validator weigh into the
3 decision as to whether they might go on Ripple's dUNL
4 list?

5 A. We don't weigh that factor.

6 Q. Who -- you don't? Meaning you, Ripple,
7 don't?

8 A. Right.

9 Q. Who does?

10 A. It becomes a factor indirectly, because one
11 of the reasons a person might want to run a validator is
12 because they are interested in the performance of the
13 XRP Ledger.

14 Q. Just to be clear, you don't have to have XRP
15 to run a validator, right?

16 A. Correct.

17 Q. Do you have any knowledge as to whether the
18 validators on Ripple's dUNL list actually have XRP,
19 nodes?

20 A. I don't.

21 Q. The universities that run validator nodes
22 that are on Ripple's dUNL list --

23 Have they received XRP from Ripple directly or
24 indirectly, as far as you know?

25 A. As far as I know, no. Obviously, Ripple

1 holds XRP. COIL, I believe, holds XRP. And some of
2 these are businesses that probably -- probably hold it.
3 I don't -- I don't know.

4 Q. Is Bitso on the Ripple dUNL list?

5 A. I believe so.

6 Q. And does Ripple have a commercial
7 relationship with Bitso?

8 A. Yes.

9 Q. Is there a process for someone to come ask to
10 be put on your list?

11 A. I don't know that there's a formal process.
12 I know people have asked us.

13 Q. Again -- I'm sorry. Who -- maybe I asked
14 you. Maybe I didn't.

15 Who at Ripple ultimately decides who goes on the
16 dUNL list?

17 A. I don't really know the process that we go
18 through.

19 Q. It's not part of your responsibilities as
20 CTO?

21 A. No.

22 Q. Does Mr. Garlinghouse have a role in that
23 process?

24 A. Well -- I mean, theoretically,
25 Mr. Garlinghouse as CEO could control any process that

1 he wants, but my knowledge of that process is that
2 either [REDACTED] -- whose last name I forgot -- or [REDACTED]
3 [REDACTED] would make a recommendation.

4 And then generally, the recommendation would
5 generally -- would -- generally, there wouldn't be
6 pushback on a -- on the recommendation. There would be
7 no reason.

8 Q. Recommendation to whom?

9 A. You know, I don't -- I don't really know.

10 Q. Okay. Before Ripple put someone on the dUNL,
11 does someone at Ripple talk to the person that's -- you
12 know, running the institution or -- or the entity that's
13 going to run this node?

14 A. I -- I -- I assume that would happen in most
15 cases.

16 Q. Why do you assume that?

17 A. Just seems odd for us to add them randomly
18 without coordinating with them at all.

19 Q. And I think you said part of your role today
20 is to make sure that -- you know, Ripple's XRP
21 doesn't -- I'm going to paraphrase, because I don't
22 think you used this word, but -- you know, doesn't get
23 stolen or sort of --

24 A. Yes.

25 Q. Okay, and why does Ripple care about that?

1 MR. CERESNEY: Objection to form.

2 THE WITNESS: So it depends on the scope
3 of the type of incident you're talking about.
4 For a small incident, reputational risk.
5 Obviously, for a large --

6 For a large incident -- I mean, no
7 company would want to have a significant theft
8 of that company's assets.

9 BY MR. TENREIRO:

10 Q. With Ripple -- with Ripple running fewer than
11 20 percent of the validators on its own dUNL list, could
12 the --

13 Could, in theory, the other non-Ripple validators
14 on your list -- you know, let's say "burn" your stash --
15 Ripple's stash -- of XRP against Ripple's will?

16 A. No.

17 Q. Why not?

18 A. Because there's no code that allows them to
19 do that.

20 Q. Couldn't they add it and make it into an
21 amendment first?

22 A. Sure.

23 Q. Theoretically, they could add it?

24 A. Right, they could add it, but then they would
25 have to convince other people to add it as well.

1 Q. Right. Ripple would not be able to stop
2 that?

3 A. We might try.

4 We may or may not be able to stop it. It's --
5 there's no way to know what the result of that would be.
6 You know, just speculation. It's just speculation.

7 Q. Right.

8 A. They may or may not be successful in that
9 attempt. There may be pushback. There may not be.

10 Q. But they have the votes to do it?

11 A. But if you don't need the votes -- the votes
12 don't help, right? The votes don't help to change the
13 rules.

14 Changing the rules requires making a change in the
15 software and then convincing exchanges and other people
16 to run that changed software. They may or may not be
17 successful in that effort, just as Ripple may or may not
18 be successful in that effort.

19 Q. But if they have 80 percent of the votes that
20 you trust, that Ripple trusts, can't they put in the
21 change in the software?

22 A. But that doesn't mean other people put the
23 change in the software.

24 Q. So they would fork the ledger?

25 A. They would fork themselves, yes.

1 Q. Those 80 percent would fork themselves?

2 A. Exactly.

3 Q. What steps, if any, does Ripple take to
4 prevent that from happening?

5 MR. CERESNEY: Objection to form.

6 THE WITNESS: If you hypothesize a change
7 that the other validators wanted to make that
8 Ripple did not want to make, and you --

9 I mean, hypothetically, Ripple could take
10 a number of steps from advocating against the
11 process -- I know theoretically even to try
12 legal action against them, I suppose.

13 There's a variety of things that Ripple
14 could attempt to stop them.

15 BY MR. TENREIRO:

16 Q. Could the 80 percent of validators on your
17 list modify the rules that currently apply to Ripple's
18 time release of XRP?

19 MR. CERESNEY: Objection.

20 BY MR. TENREIRO:

21 Q. Colloquially known as the "escrow," but --

22 A. They could propose modification.

23 Again, if they actually activated the modification,
24 then anybody who didn't modify their own code would
25 fork. That would -- that would cause a fork.

1 Q. You mentioned the exchanges would have to
2 implement that software change. The exchanges are
3 running -- you mean the ones running validator nodes?

4 A. No.

5 Q. Why would the exchanges have to implement
6 that software change?

7 A. They currently have no code to allow you to
8 burn Ripple's XRP or change the escrow, so they wouldn't
9 understand that change.

10 They would just disagree with those validators, and
11 if they disagree with -- we presume they run the default
12 UNL, so now you have a server that disagrees with 80
13 percent of its validators.

14 (Thereupon, an informal discussion was
15 held off the record with the shorthand
16 reporter.)

17 THE WITNESS: You have a server that
18 disagrees with 80 percent of its validators.

19 It needs to agree with 80 percent of its
20 validators to make forward progress, so it's
21 halted permanently until there's some external
22 given resolution. Sorry. I apologize.

23 (Thereupon, an informal discussion was
24 held off the record with the shorthand
25 reporter.)

1 BY MR. TENREIRO:

2 Q. I just -- I understand all that,

3 What I don't understand is what role do the
4 exchanges play if they are not running validator nodes?

5 A. If it -- so imagine -- let's walk through
6 your hypothetical. So somebody proposes this change
7 that Ripple objects to. They make the change to the
8 software.

9 The exchanges don't accept the change to the
10 software. Eighty percent of the validators activate the
11 change. All of the exchanges halt. That's the end
12 result.

13 Q. Yeah.

14 A. That hasn't successfully made the change.

15 That's just successfully halted the network. Now
16 they have to convince the validators to make that
17 change.

18 Q. And the exchanges have to run the updated
19 software to interact with the XRP Ledger, in other
20 words?

21 A. To continue, yes. That's right.

22 Q. Even though they're not --

23 Even though they are not running validators, they
24 still need to have the most -- they still need to have
25 the same software that everyone else is using to

1 continue operating on that ledger?

2 A. They have to understand the system's rules.
3 If there's a rule change that they -- they don't know
4 what that rule change -- they literally just say, "I
5 don't know what rules are," and so they can't --

6 They can't even understand -- the rule change could
7 be anything, and so they don't know what it is, and so
8 there's simply no way they could make any progress.

9 MR. CERESNEY: You have to slow down for
10 the court reporter.

11 THE WITNESS: Sorry.

12 (Thereupon, an informal discussion was
13 held off the record.)

14 BY MR. TENREIRO:

15 Q. Let's talk about my hypothetical, and the
16 rule change in my hypothetical is something that would
17 permit 80 percent to burn and destroy Ripple's XRP
18 holdings.

19 A. Right.

20 Q. Do you have -- as part of your --

21 As a part of your function to protect Ripple's XRP
22 holdings, have you developed any theories as to whether
23 the changes would accept any such amendment to the code?

24 MR. CERESNEY: Objection to form.
25

1 BY MR. TENREIRO:

2 Q. I'm asking you for your own theories, not
3 what other people think.

4 A. My expectation would be that they would not.

5 Q. Why?

6 A. Because radical changes that upset settled
7 expectations are generally considered undesirable, but
8 you would have to flush out the hypothetical. Like if
9 you flush out the hypothetical in which that would
10 happen, it's possible that would change, if it just came
11 up out of the blue today.

12 I would expect everybody in the community would
13 push back against any radical change without any sort of
14 justification. There's a huge bias against change.

15 Q. So is it fair to say that it's a settled
16 expectation that Ripple has the XRP that it has today?
17 That's a settled expectation in the community?

18 MR. CERESNEY: Objection, form and
19 speculation.

20 MR. TENREIRO: No, his understanding. No
21 speculation.

22 MR. CERESNEY: You're asking him what the
23 community thinks.

24 BY MR. TENREIRO:

25 Q. You're part of the XRP Ledger community,

1 right?

2 A. I don't think people would expect that to
3 change.

4 Q. Okay, and --

5 Okay. Is Ripple still the largest single holder of
6 XRP?

7 A. Yes.

8 Q. What is the financial incentive for someone
9 to run a validator?

10 A. Generally, people would run a validator
11 because they needed to run an XRP Ledger node anyway,
12 like it was part of their business or part of what they
13 were doing. The additional cost to run a validator is
14 essentially zero.

15 Q. So, for example, an exchange might run a
16 validator for that reason?

17 A. Right. They'd be running a server anyway in
18 order to process transactions, and the additional cost
19 to make it a validator is essentially zero. It's almost
20 literally just you enter one command.

21 Q. Do you have to run a server -- do you have to
22 run a validator? Does an exchange have to run a
23 validator?

24 A. No.

25 Q. Okay. I'm sorry if I'm asking again. Why

1 are you -- I know it didn't exist back then. Why don't
2 you just use Proof of State today for the consensus
3 mechanism?

4 (Inaudible.)

5 THE SHORTHAND REPORTER: Was that an
6 objection?

7 MR. CERESNEY: Yes, objection to form.

8 MR. TENREIRO: We can take the exhibit
9 down, by the way. Thank you.

10 THE WITNESS: Again, it didn't exist at
11 the time, but Proof of Stake makes the
12 stakeholders the people who hold the asset.

13 MR. CERESNEY: We've been going more than
14 an hour. Is it a ripe, opportune moment?

15 MR. TENREIRO: Yeah. I'm almost done
16 here.

17 BY MR. TENREIRO:

18 Q. All right. We talked about that.

19 Why do people use Ripple's UNL instead of somebody
20 else's, to the extent that they do, and other than the
21 default?

22 MR. CERESNEY: Objection to form. Are
23 you asking him to speculate or his view?

24 MR. TENREIRO: His understanding.

25 I assume he interacts with people that

1 are running validators or that are in the
2 community. If that's not true, he'll let me
3 know.

4 THE WITNESS: My understanding would be
5 that unless they had some reason to change it,
6 it's just easier not to change a default.

7 BY MR. TENREIRO:

8 Q. Does Ripple strongly recommend using its own
9 dUNL?

10 MR. CERESNEY: Objection to form.

11 THE WITNESS: I don't think so.

12 BY MR. TENREIRO:

13 Q. Does Ripple recommend that people use its
14 dUNL?

15 MR. CERESNEY: Objection to form.

16 THE WITNESS: It is our recommended -- we
17 call it the "recommended dUNL" or the "default
18 dUNL".

19 BY MR. TENREIRO:

20 Q. Why?

21 A. Because if you use that UNL, then you don't
22 have to go through any additional steps. It just
23 simplifies your decision-making.

24 Q. What do you think would happen if Ripple
25 stopped publishing the dUNL?

1 MR. CERESNEY: Objection.

2 BY MR. TENREIRO:

3 Q. In terms of the functionality of the
4 blockchain?

5 MR. CERESNEY: Objection to the form.

6 THE WITNESS: I -- I think people who --
7 people who used COIL's UNL or the XRP Ledger
8 Foundation's UNL wouldn't even notice.

9 People who already had a fallback UNL
10 configured would fall back to that fallback.
11 People who only use the default UNL would then
12 have to make a decision as to which UNL to
13 switch to.

14 BY MR. TENREIRO:

15 Q. Why doesn't Ripple just stop publishing a
16 dUNL?

17 MR. GERTZMAN: Objection to form.

18 THE WITNESS: I wouldn't advocate for us
19 to stop publishing a dUNL, because it saves --
20 it saves developer -- it saves users the
21 necessity of going through steps, but we could
22 switch the default to COIL's UNL or the XRP
23 foundation's UNL. There's no reason
24 particularly to do.
25

1 BY MR. TENREIRO:

2 Q. If another organization published a UNL that
3 was used by the majority of the validators instead of
4 the dUNL, what would be the impact on the network's
5 consensus?

6 MR. GERTZMAN: Objection to form.

7 THE WITNESS: It would either be nothing,
8 depending on exactly how you envision the
9 scenario.

10 It would either be nothing or you could
11 reach a situation where the unintentional fork
12 protections kicked in, and then some servers
13 would perceive the network to have halted,
14 because they wouldn't see sufficient
15 agreement.

16 BY MR. TENREIRO:

17 Q. Who put in the unintentional fork
18 protections?

19 A. I believe I did.

20 Q. Right.

21 A. So they have evolved over time. I believe
22 the first iteration of them went in at the same time the
23 amendment process was created, but I can't place it in
24 time better than that.

25 Q. Was it in the beginning, 2011/2012?

1 A. I think they were -- I think there were, but
2 they were significantly less than they were -- than they
3 were now. I believe that the behavior of those
4 protections would have been more inconsistent.

5 So, for example, you might have gotten a warning,
6 but the server might have continued operating. They
7 were not as robust.

8 Q. Is there any way for this distributed
9 consensus that Ripple has described for its ledger to
10 work without relying on someone to publish the common
11 UNL list or having -- you know, ledger forks constantly?

12 MR. CERESNEY: Objection to form.

13 THE WITNESS: There has to be some
14 mechanism for people to roughly agree on who
15 the validators are.

16 BY MR. TENREIRO:

17 Q. Don't they have to agree on who they trust to
18 agreement? Isn't that what they have to agree on first?

19 MR. CERESNEY: Objection to form.

20 BY MR. TENREIRO:

21 Q. At least 80 to 90 percent agreement on that?

22 A. I'm not -- not quite sure I follow.

23 Q. Well, there has to be a mechanism for people
24 to agree on who the validators are? That's referring to
25 the UNL list?

1 A. There has to be substantial agreement on the
2 UNL. Ideally, 90 percent. 80 percent is sufficient in
3 most practical scenarios, but 90 percent is safe.

4 Q. So how do you get to the point where people
5 roughly agree on who the validators are? How do you
6 achieve that?

7 A. There's two ways. The earliest way and the
8 simplest way is just to literally directly come to that
9 agreement. Like everybody can literally have a
10 conversation and come up with an agreement. The problem
11 is that it's static. It's at one point in time.

12 The better method is to agree on some number of
13 people who will make that decision, and then, of course,
14 you can always revise that if you're unhappy with the
15 decision they made.

16 Q. What role does Ripple play today in ensuring
17 that there's substantial agreement on who the validators
18 are?

19 A. Today, Ripple publishes a UNL.

20 And obviously, if everybody used that UNL exactly,
21 there would be complete agreement.

22 Q. But they only need to use the 80 or 90
23 percent?

24 A. Or they could opt to intentionally fork or
25 they could risk an unintentional fork.

1 Obviously, you wouldn't want to risk -- generally,
2 you wouldn't -- obviously, the word "unintentional"
3 generally means you don't want it. But, of course, if
4 they wished to intentionally fork, then they would
5 deliberately not follow it.

6 Q. Have there been forks of the Bitcoin Ledger?

7 A. Yes.

8 Q. And the Ethereum Ledger?

9 A. Yes.

10 Q. But not of the XRP Ledger?

11 A. Not unless you count Stellar, but I generally
12 wouldn't.

13 Q. Right. Let's not count Stellar, unless you
14 do, but my question is generally, would not --

15 A. I generally would not.

16 So as a "yes" or "no" answer, but answer would be
17 "Not to my knowledge."

18 Q. And do you know why there's been forks of
19 those ledgers but not this one? What's the difference
20 or what would you attribute the difference to?

21 A. It's -- well, so one thing that I would say
22 is the forks that we have had are Bitcoin and the
23 Ethereum blockchain were connected to specific events
24 that occurred, and no such event has occurred in the XRP
25 Ledger ecosystem.

1 There's no -- there's no real reason to fork unless
2 there is some sort of event that triggers some sort of
3 disagreement.

4 Q. What was the event in the Bitcoin blockchain?

5 A. The event in the Bitcoin blockchain was the
6 dispute over the evolution of Bitcoin, whether bigger
7 blocks were the step forward or whether they threatened
8 decentralization and a segregated witness was the better
9 path.

10 Q. And no such dispute has arisen with this
11 blockchain?

12 A. Not that anyone has been willing to fork
13 over, to my knowledge, and I would probably know if it
14 happens.

15 Q. So like the Checks Amendment?

16 A. Right. There was a dispute, but -- Ripple
17 didn't get its way, but we said whatever.

18 Q. That's an amendment Ripple wanted at first,
19 right?

20 A. It's an unusual thing. We proposed it. We
21 developed it, and then we later opposed it and it was
22 accepted anyway.

23 MR. TENREIRO: Okay. Let's stop here,
24 because Andrew asked for a break.

25 THE VIDEOGRAPHER: Okay. Going off the

1 record at 11:56.

2 (Recess taken at 11:56 a.m.)

3 (Resumed at 12:10 p.m.)

4 THE VIDEOGRAPHER: Back on at 12:10.

5 BY MR. TENREIRO:

6 Q. Mr. Schwartz, have you ever met Jay Clayton?

7 A. Yes.

8 Q. When?

9 A. I met him twice. Once at a meeting, and once
10 I passed him in a hallway at the SEC.

11 Q. Have you ever met any other SEC commissioner?

12 A. At the time I -- I passed him in a hallway,
13 he was with Hester Peirce.

14 Q. Did you meet her or just see her?

15 A. I said, "Hello" to Clayton, because I'd met
16 him before. I just saw her.

17 Q. Have you ever met any other SEC
18 commissioners?

19 A. No.

20 Q. When was the meeting with Clayton?

21 A. I don't recall the date.

22 Q. Who was there?

23 A. It's hard for me to remember, because I had
24 two meetings with the SEC that were a couple of weeks
25 apart, and it's hard for me to separate what happened --

1 who was at the first meeting, who was at the second
2 meeting. I know Clayton was there.

3 I know John Roscoe, from the Office of Presidential
4 Personnel, was there. Brad Garlinghouse, I believe, was
5 there, and I know there were several other people from
6 the SEC, but I couldn't tell you more detail than that.

7 Q. Anyone else from Ripple?

8 A. I -- I don't believe so.

9 Q. Lawyers from Ripple?

10 A. My recollection, which is not precise, is
11 that we did not have counsel at that first meeting, but
12 I'm not sure.

13 Q. The other meeting you're recalling at the
14 SEC -- was that with staff that was conducting the
15 investigation?

16 A. I believe -- I believe most of the people who
17 were there were from Corp Fin, but that's the extent of
18 my recollection.

19 Q. Were Ripple's lawyers there?

20 A. I believe we did have counsel at that
21 meeting.

22 Q. Why did you meet with Clayton?

23 A. From my point of view, the purpose of the
24 meeting and the reason that Brad wanted me at that
25 meeting rather than something else was to cover

1 technical aspect of the function of the XRP Ledger.

2 Q. Why did you want to give that presentation to
3 Clayton? And I -- maybe I should say, "Chair Clayton"
4 every time. Faster.

5 Why did you want to give Chair Clayton a technical
6 presentation of the XRP Ledger?

7 A. My understanding at the -- I'm trying to
8 remember what time period --

9 MR. CERESNEY: Actually, if you had
10 discussions with counsel, obviously you
11 shouldn't reveal that about the meeting. In
12 other words, it sounds like counsel wasn't at
13 the meeting.

14 But if you had discussions with counsel
15 in advance of the meeting and that's the basis
16 for the meeting, you shouldn't answer that.
17 If there's other discussions, obviously you
18 should go there.

19 THE WITNESS: My recollection, and I
20 could be confusing the meeting with other
21 meetings, but my recollection is that this was
22 around the time that other SEC commissioners
23 had made statements about -- about
24 cryptocurrencies.
25